

GSL XXII

Seminar by:

Randy

Derr

How do you define scratch building?

Per Wikipedia: **Scratch building** is the process of building a scale model from raw materials, rather than building it from a commercial kit, kit bashing or buying it pre-assembled.



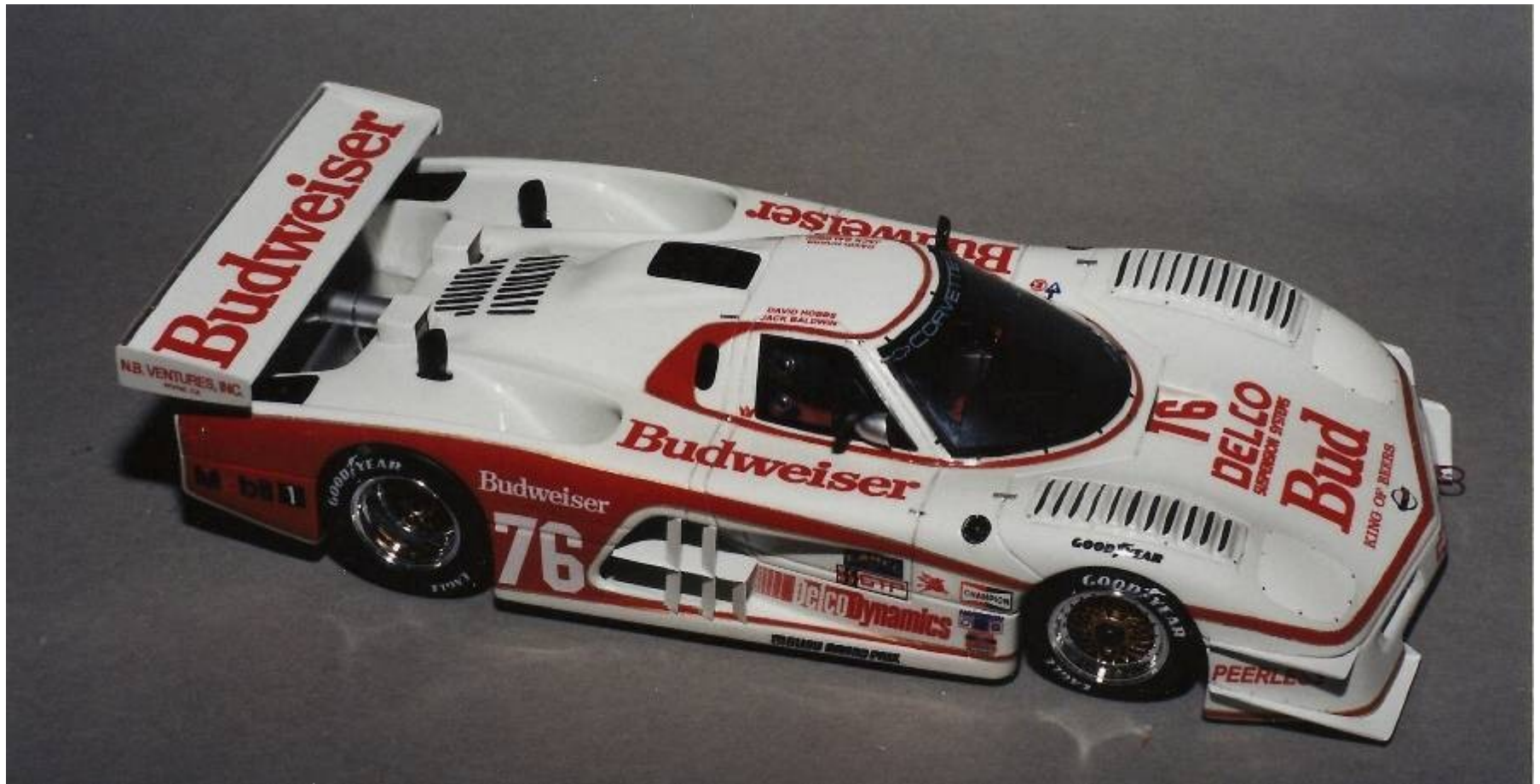
Perhaps your definition involves something not quite that involved or specific. How about taking some sheet plastic, a resin truck cab, an acrylic rod and some miscellaneous kit parts to build...



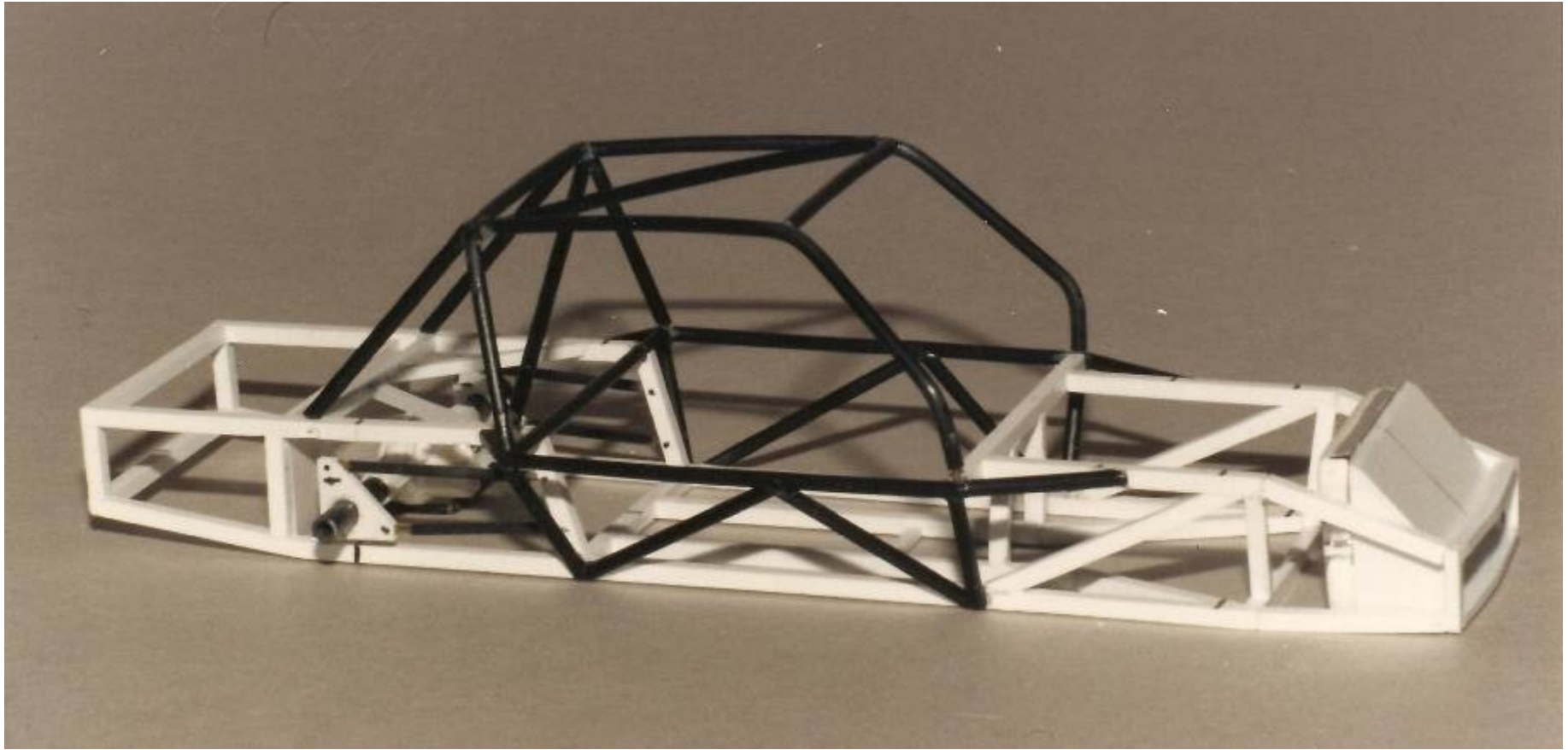
...a replica of the Hugo Zacchini “Human Cannonball Truck”?
(By the way, the full-size truck resides at Barnum and Baileys Circus World
Museum in Baraboo, WI.)



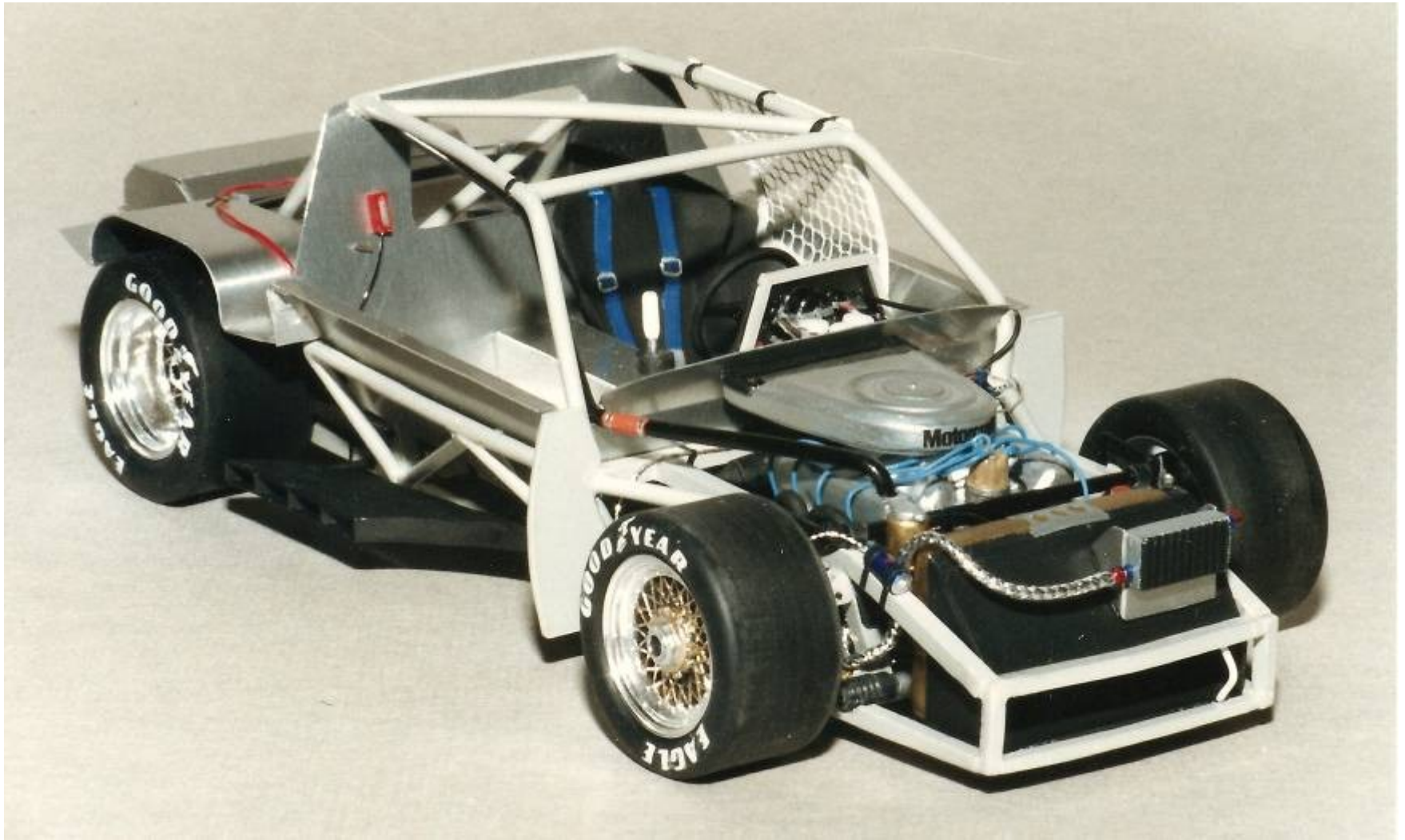
Or maybe taking a somewhat obscure, but not totally inaccurate race car toy and modifying it with sheet plastic, brass, custom decals...



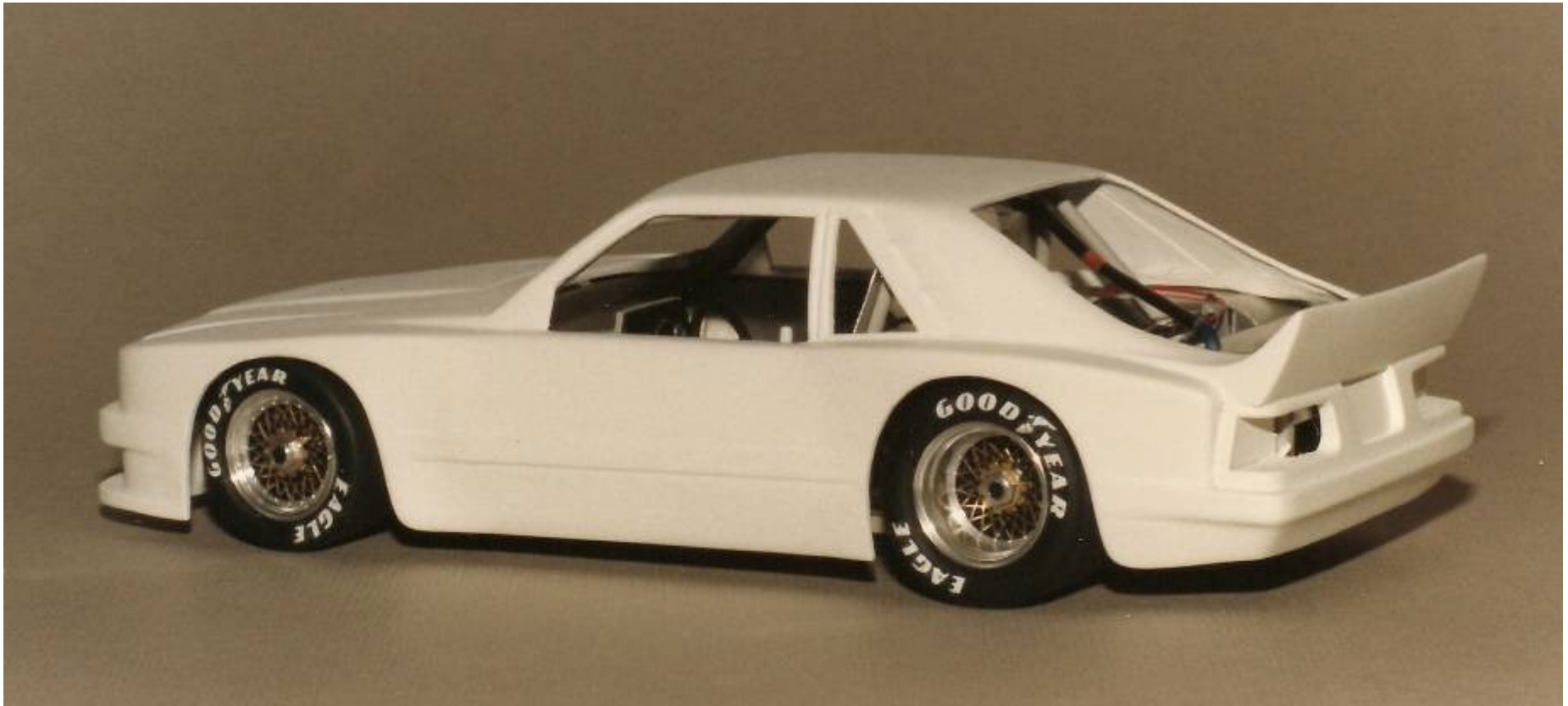
...to replicate the Budweiser-sponsored, Peerless Racing IMSA Corvette GTP? Is that more along the lines of your building style?



Or maybe your style is more like this; use some Evergreen styrene rod and square stock to build a basic frame...



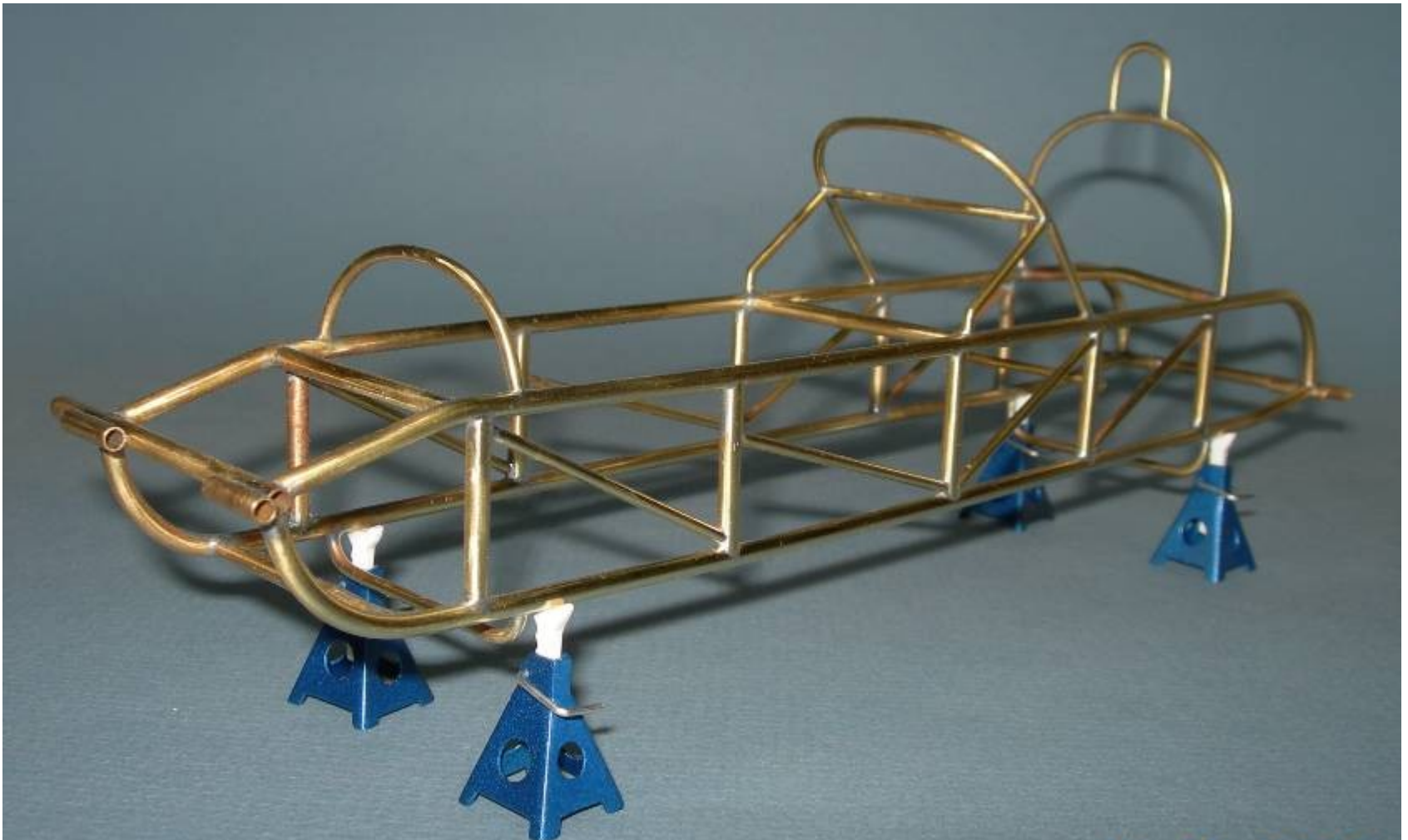
...then add a “few additional details” to finish the chassis,
along with...



...adding some sheet plastic and putty to the body, to end up with...



...a replica of the Motorcraft Capri Trans Am race car.



Or maybe you are one of those “1 Percenters” (aka: “The Lunatic Fringe”). Perhaps you are one of those builders out there who construct a sprint car frame from brass rod and tube...



..then add some resin parts cast from your own masters, along with some custom photo-etch from your own artwork...



..along with some hand-formed brass and vacuum-form body panels and a hundred other details to build this 1/12th scale replica of the 1966 USAC Championship winning sprint car.
(to be continued...)

But first, let's go back
in time to my modeling
building roots.



The Early Years...



The humble beginnings of a scratch builder...

A 1/12th scale CanAm racer made from cardboard, covered with contact paper, using Lotus F1 wheels and tires.



But then, a new material discovery was made...



Resulting in this creation: a 1/12th scale CanAm racer with a scratch built sheet plastic body and chassis using Ferrari F1 kit parts for the engine, wheels/tires, etc...



Which then led to this one; also a Can Am racer in 1/12th scale with hand-formed sheet plastic body panels, brass turbochargers, utilizing Tyrell F1 drive train parts.



And finally, the last in that series; a 1/12th scale closed-cockpit endurance racer using sheet plastic body panels and McLaren F1 running gear.



That discovery started me on a path of improvising with my model building using non-traditional materials and I am always on the lookout for some new material to use. In fact, even my wife helps with this “affliction” as she has learned to ask me...



***Hey! Can you use
this on your model?***

Uncommon Uses for Common Materials in Model Building

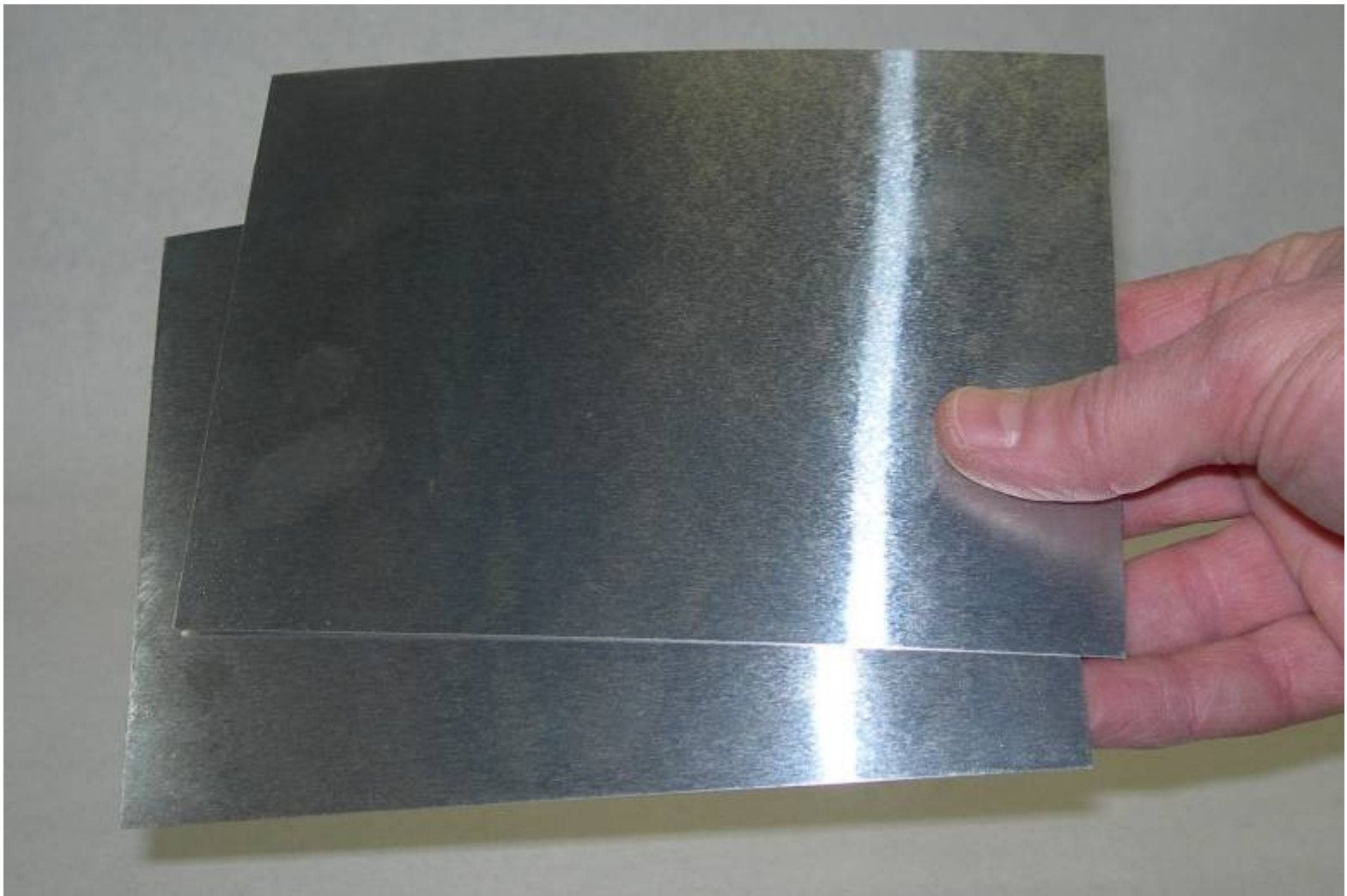
And now for the “fine print”:

While many of the ideas included herein are the original ideas of the presenter, many are not and I apologize in advance for any “borrowed ideas” used without giving proper credit to their creators, but quite frankly, I can’t remember who I borrowed them from.

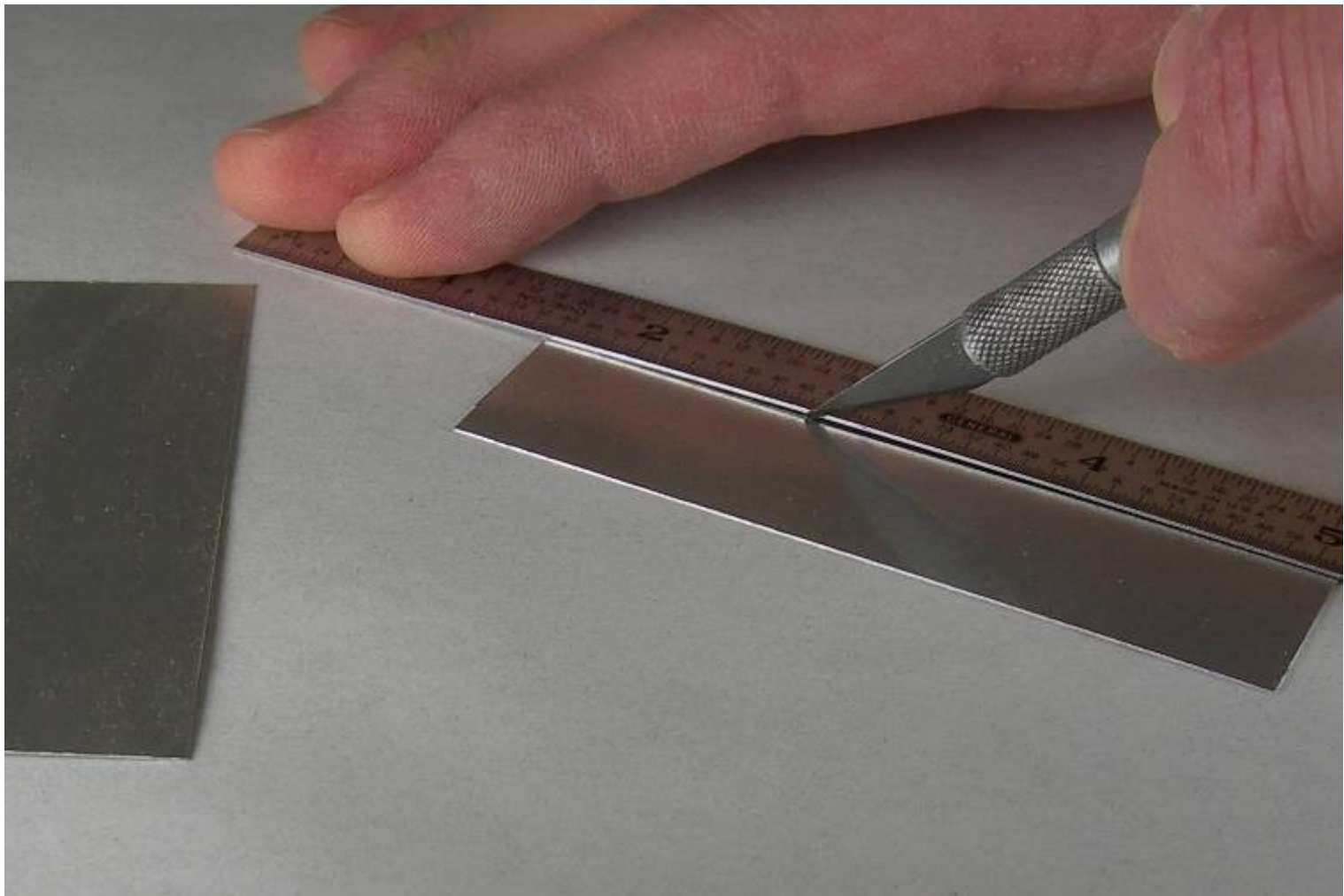
These ideas are presented as a collection of my favorites, ones I use regularly and I hope you can use and enjoy them too.

While many of the ideas included herein are the original ideas of the presenter, many are not and I apologize in advance for any “borrowed ideas” used without giving proper credit to their creators, but quite frankly, I can’t remember who I borrowed them from.

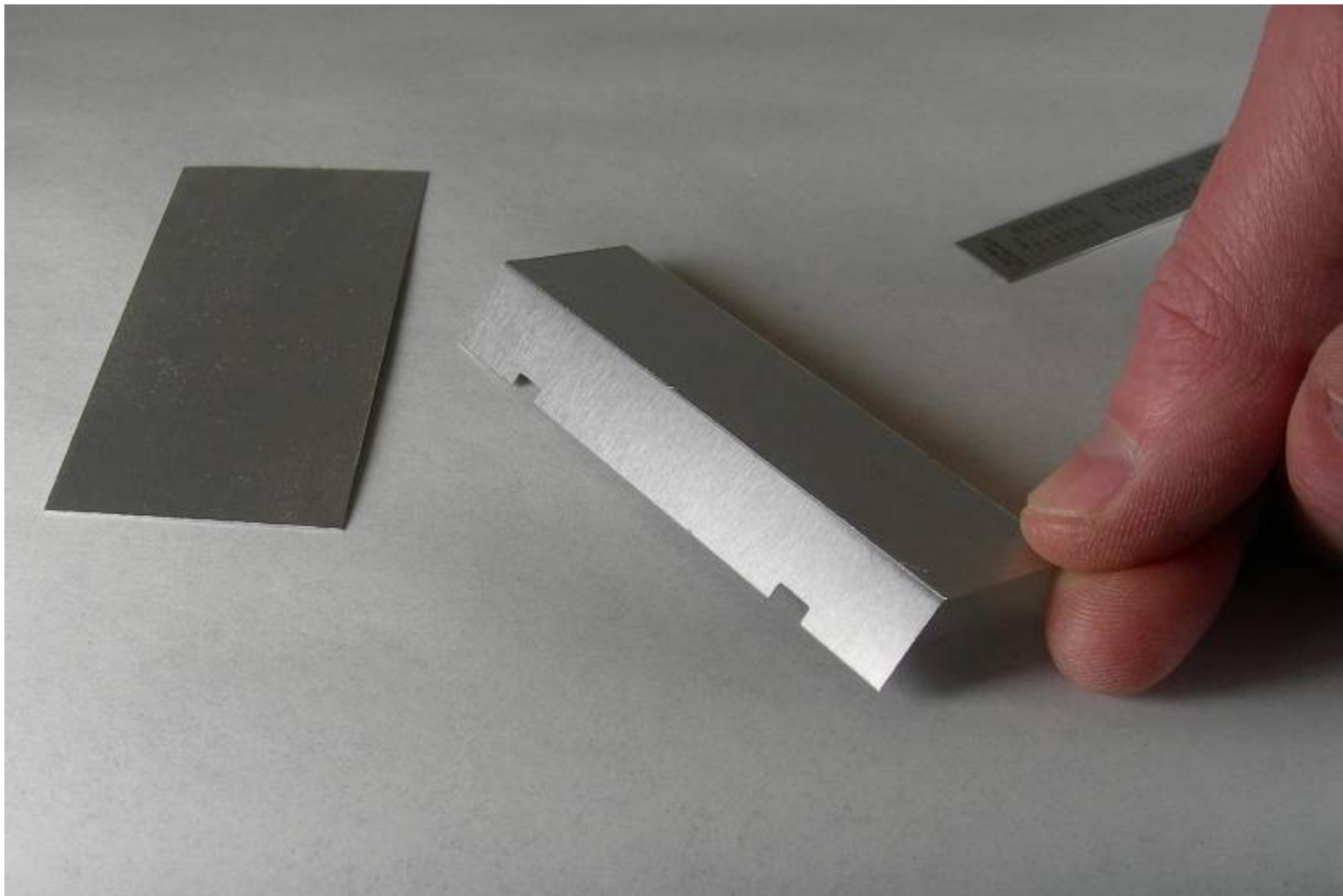
These ideas are presented as a collection of my favorites, ones I use regularly and I hope you can use and enjoy them too.



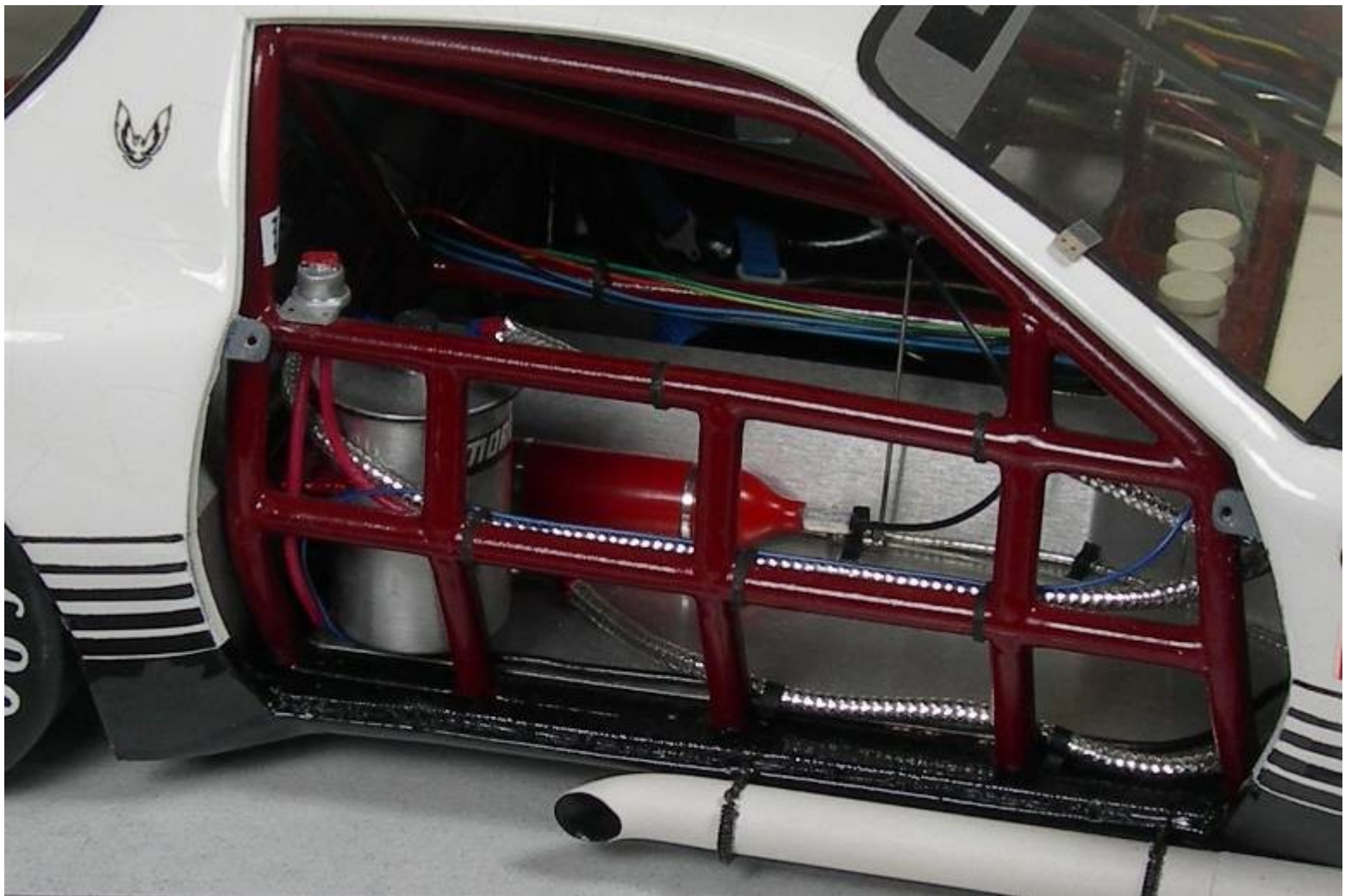
Aluminum flashing is found in the roofing materials department of home supply stores. It is about 0.010" thick with a nice glossy, brushed finish.



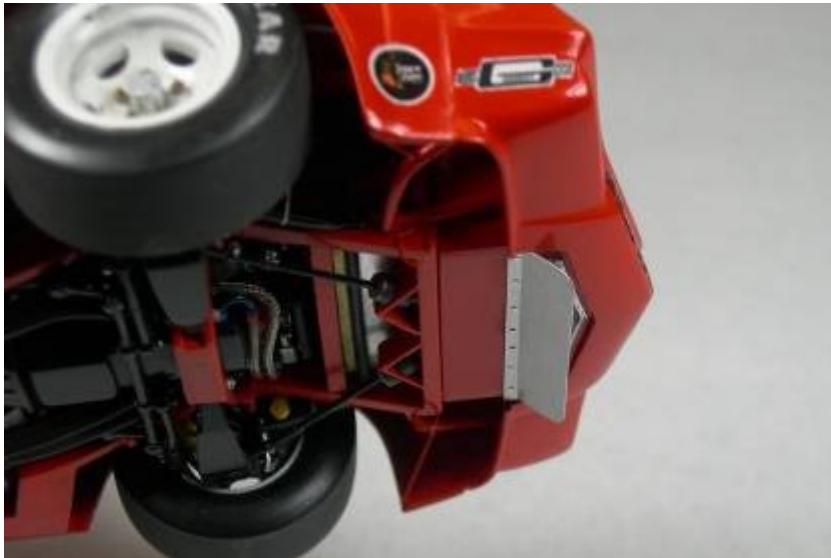
The metal is fairly rigid, but it can be scored and broken to form panels of the desired size and shape.



Scoring it lightly and bending it over the sharp edge of a workbench top allows for the forming of more complex panels. Small openings can be drilled and/or filed to shape.



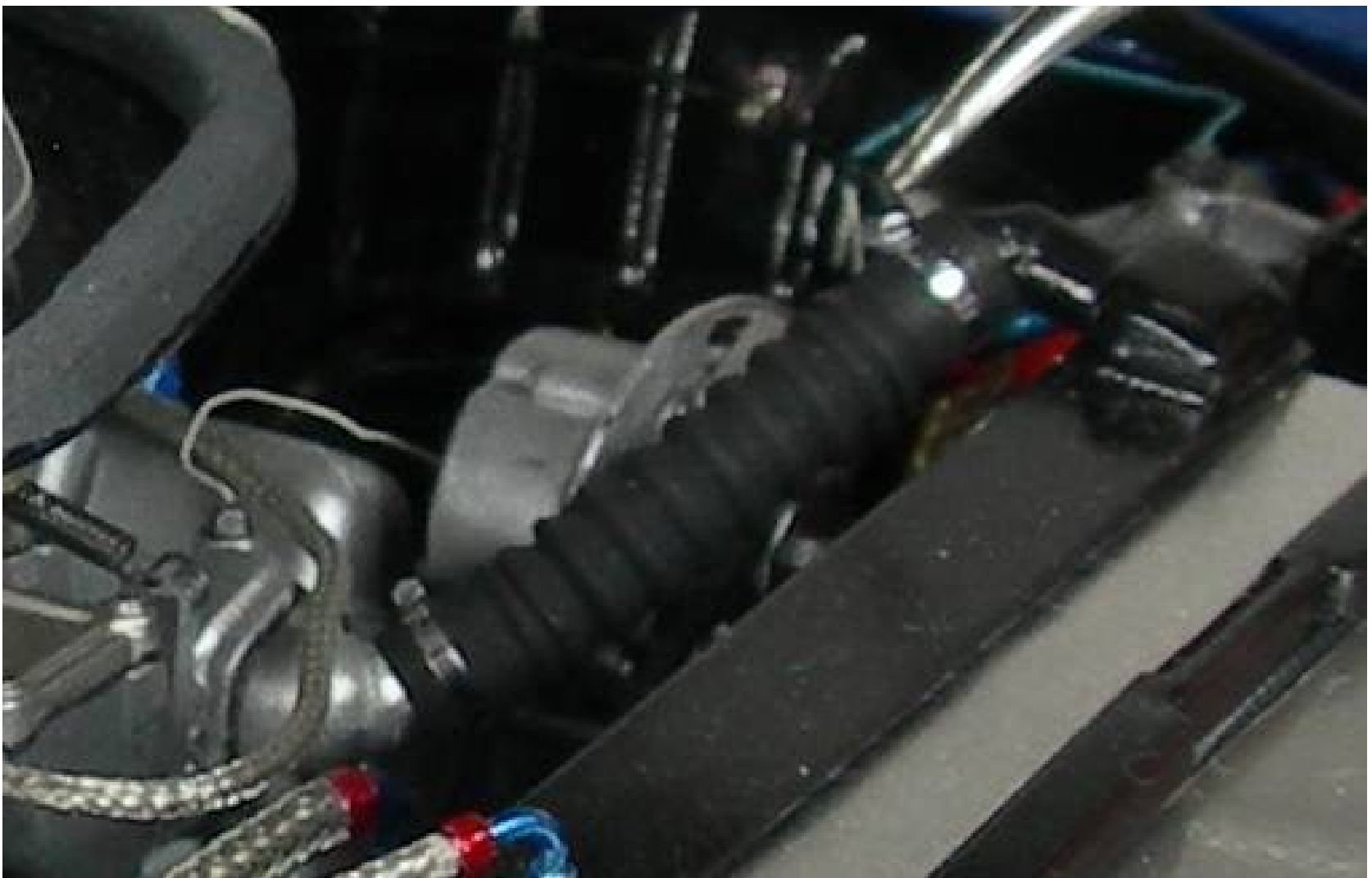
The resulting panels can be used for entire interiors...



...or air dams and spoilers.



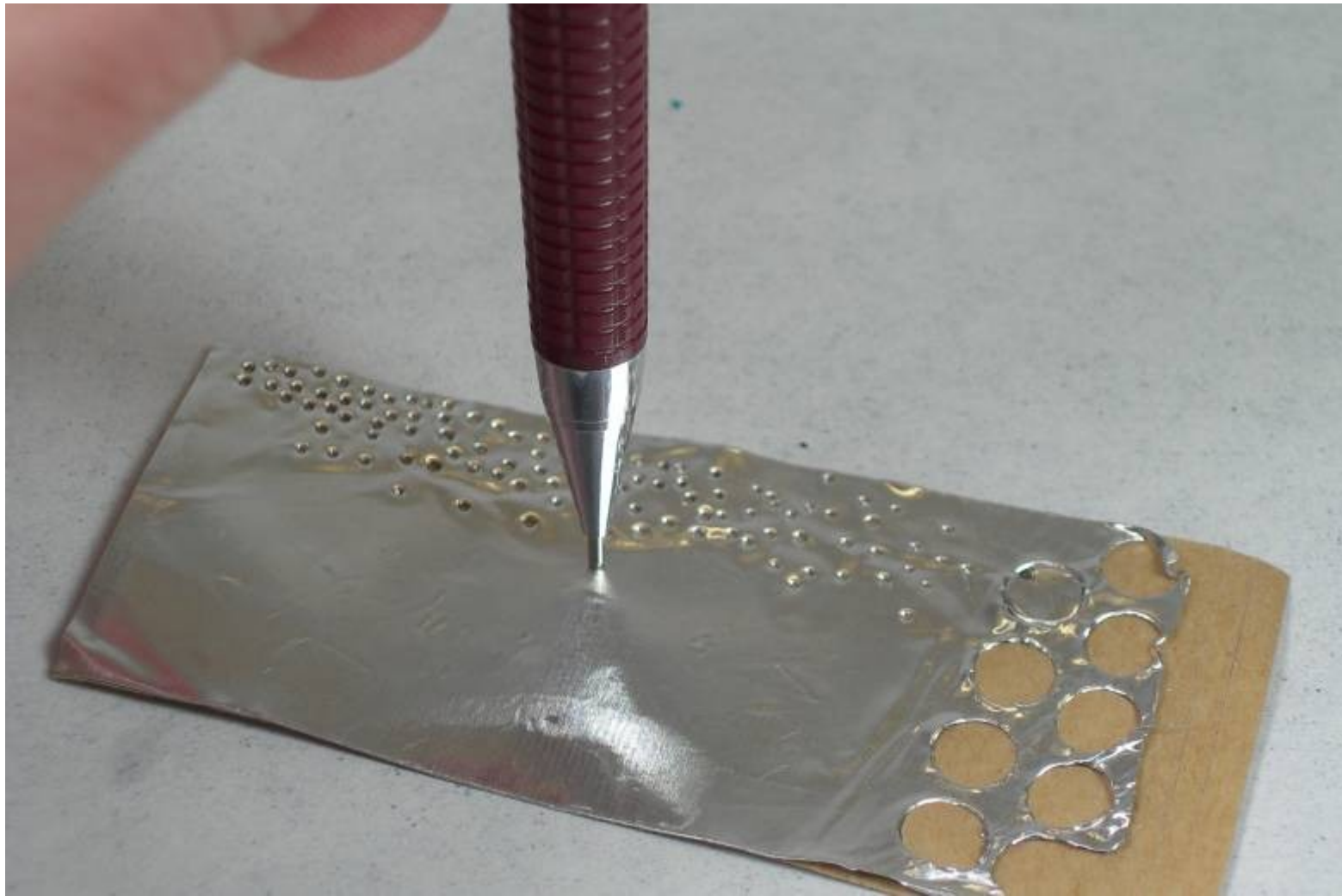
Aluminum furnace tape from a hardware or home supply store is a great source of soft, adhesive-backed aluminum foil that can be used to...



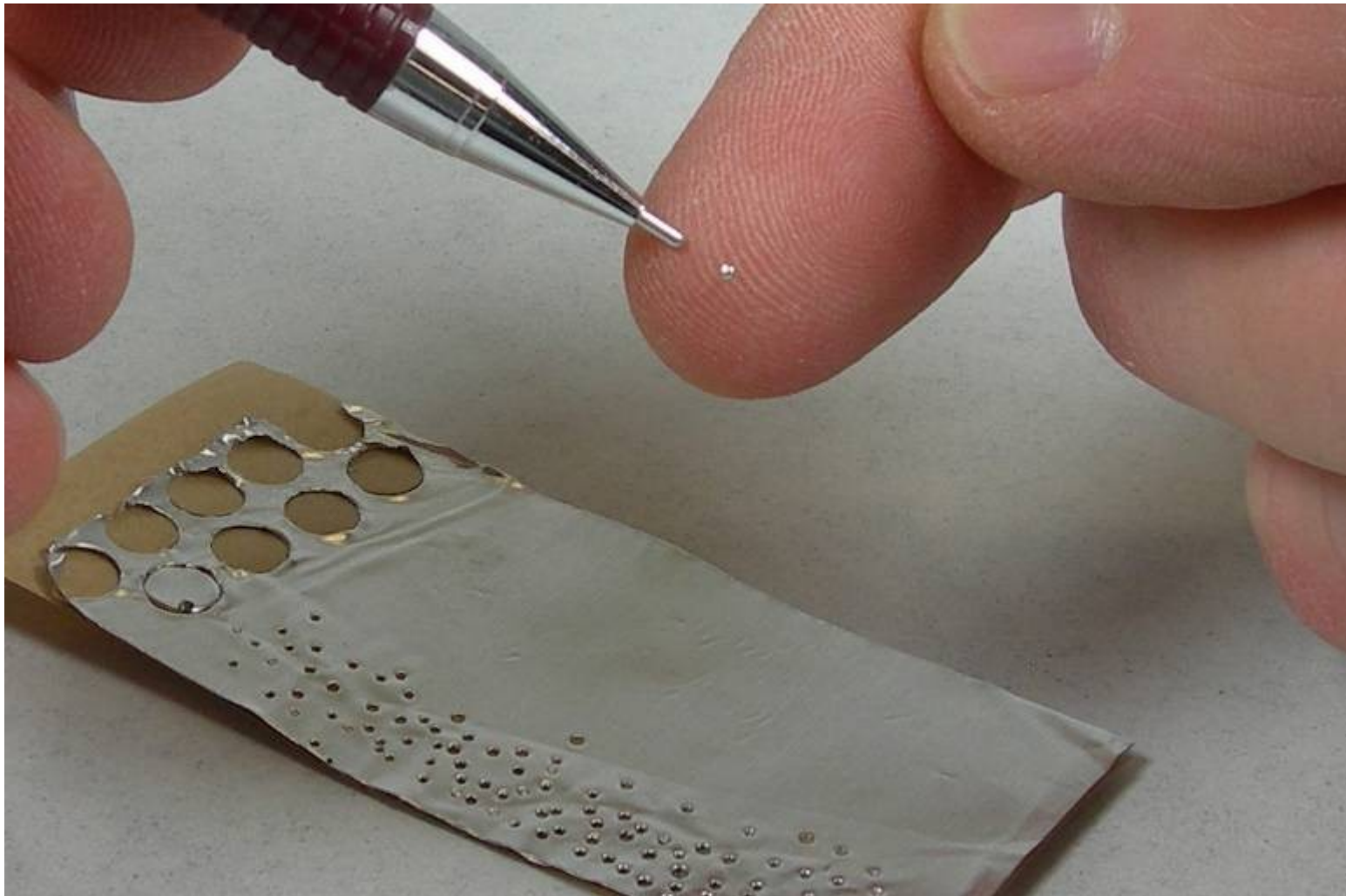
...replicate many different aluminum parts, such as hose clamps, straps, trim pieces, etc..



A favorite use involves modifying a Pentel mechanical pencil by sharpening the metal sheath that supports the lead...



...then using this as a punch to cut out small dots of the aluminum tape...



...which can then be applied using the lead advance mechanism to “eject” the dot...



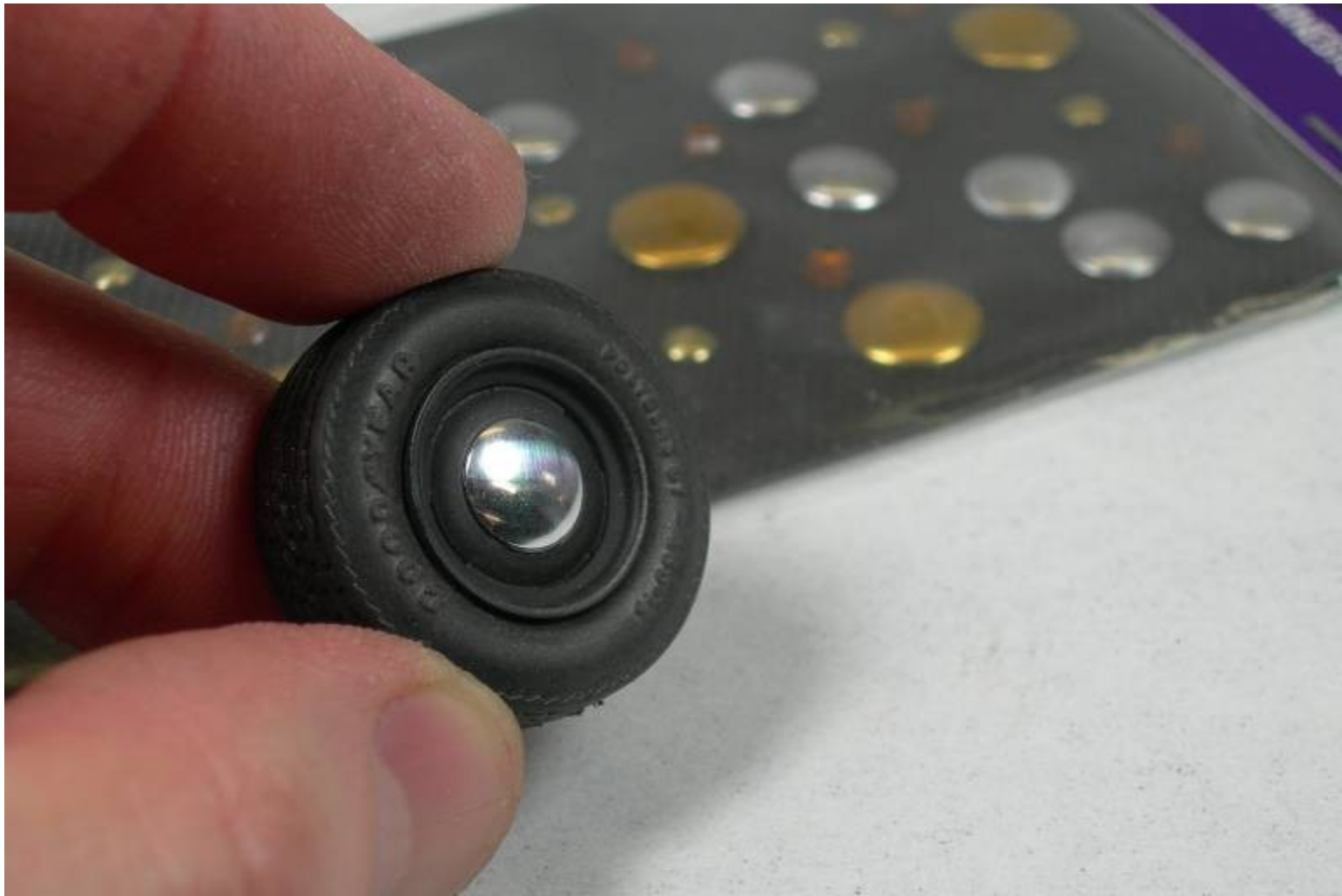
..to replicate pop-rivets.



Pentel pencils come in several sizes, from 0.3mm to 0.9 mm, providing a good range of scale rivet sizes.



Iron-on rhinestones and studs from a fabric store or sewing department...



...can be used to replicate baby moon hubcaps.



Another fabric store item is ribbon. It comes in a large selection of colors, textures, and sizes, and has many modeling uses, such as...



...tie-down straps for work truck loads. Just add buckles made from aluminum sheet and hooks from small gage wire, give them a black wash to simulate dirt from use and you are finished.



Beading wire found at craft stores...



...or fishing line leaders from a sporting goods store can be used to make...



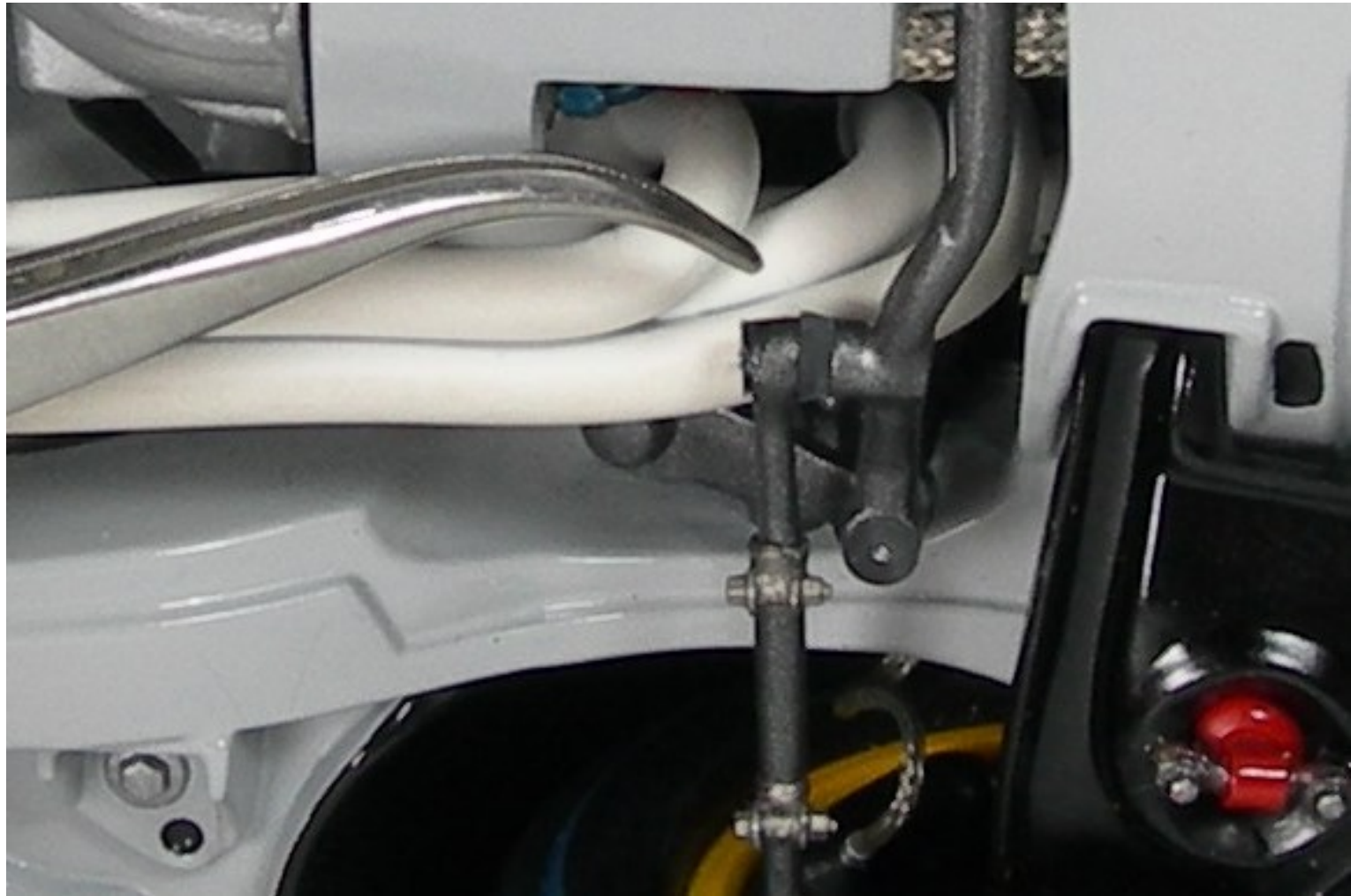
...cables on tow trucks or other work-type vehicles.



A bicycle tire inner tube is a great source for...



...thin rubber sheet that can be used for to make mud flaps...



...or even tie rod end dust boots for working steering linkage.



A variety of pastel chalks are available at art and craft stores.



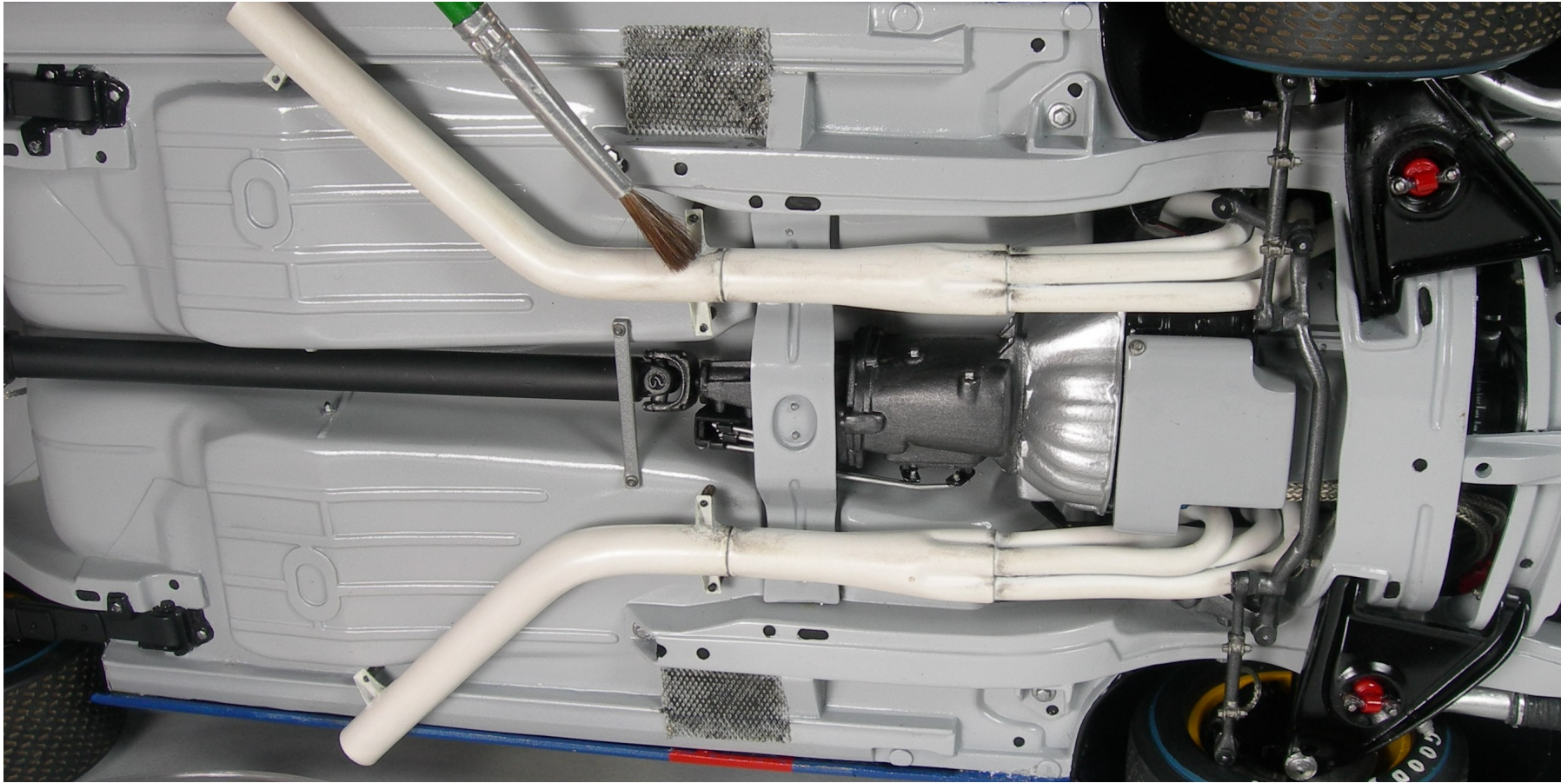
Use a hobby knife to shave some of the chalk into a container...



...then use an old paint brush to apply the chalk dust to tire treads to add depth and contrast...



...or engine compartments and underbody areas to mimic subtle weathering...



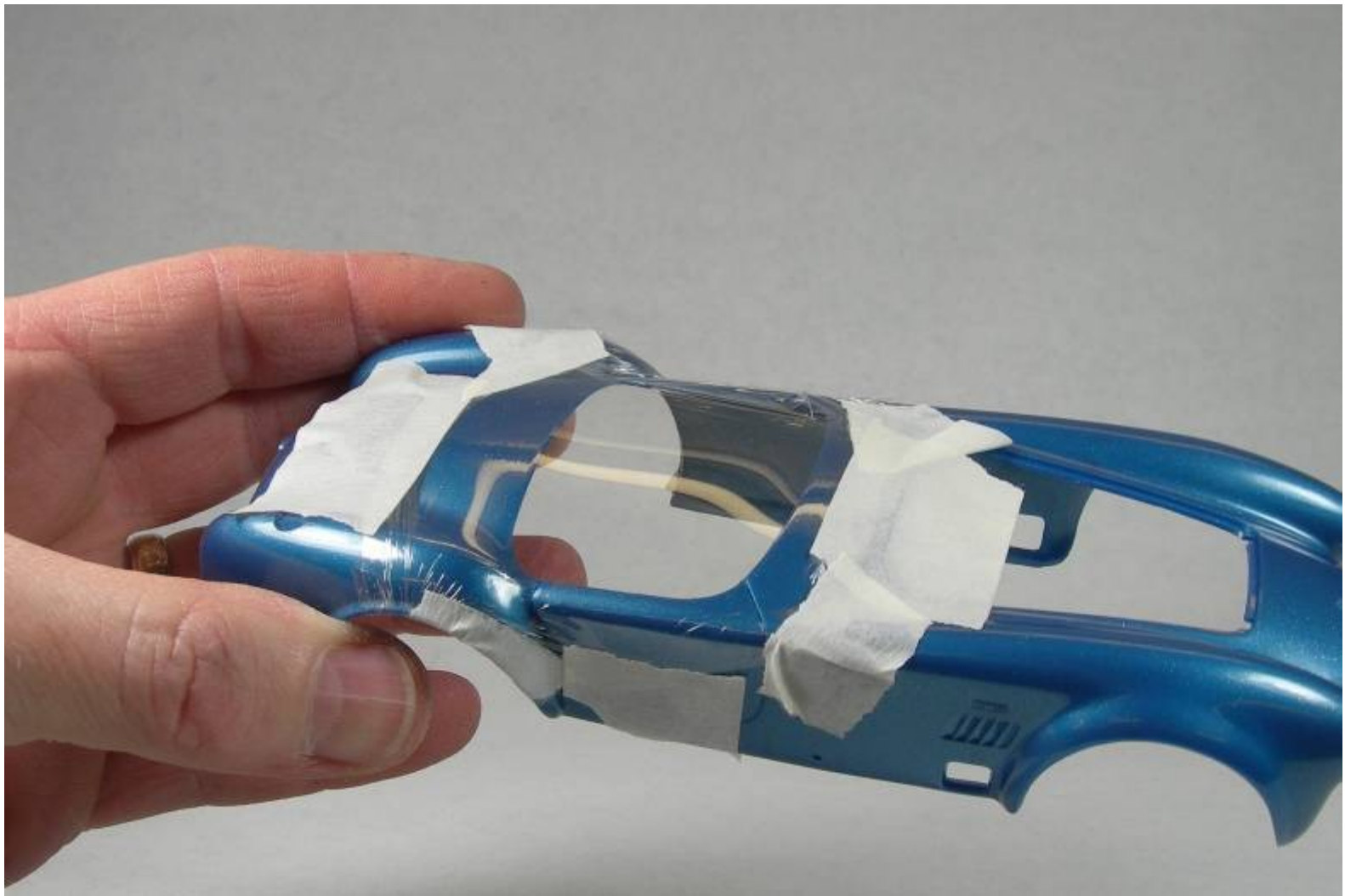
...or exhaust systems to replicate evidence of small leaks.



A small piece of steel wool soaked in a salt water solution will provide a ready supply of real “rusty weathering” wash.



Tissues can be used for many things, but one idea for model building is...



...to fabricate a canvas cover such as a tonneau cover on a sports car. Start by covering the desired area with clear plastic food wrap...



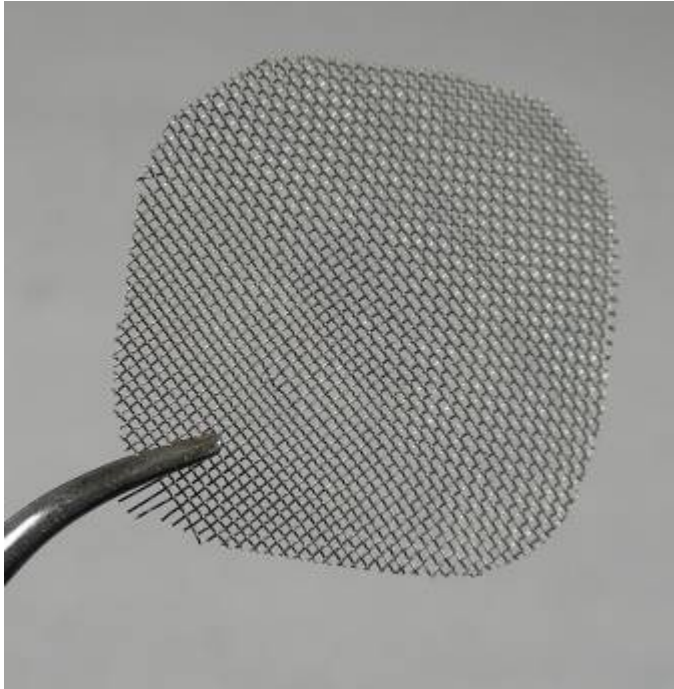
...then apply a piece of tissue to the area, coating it with a mixture of white glue and water. Use caution not to tear the paper and be sure to work out all the trapped air bubbles.



Once the white glue is dry, carefully remove the paper from the plastic wrap, cut to final shape, paint the desired color and add some rivet detail prior to gluing into position.



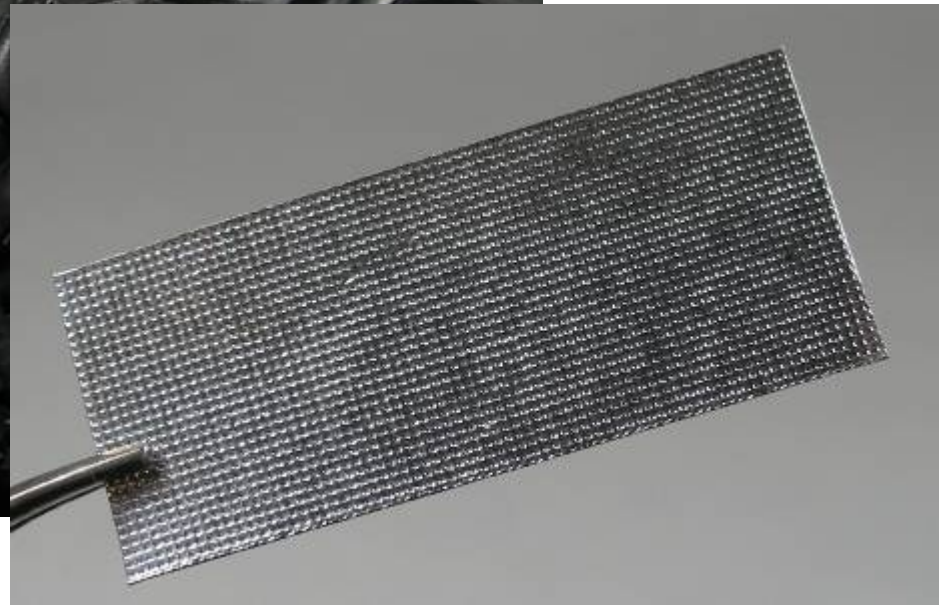
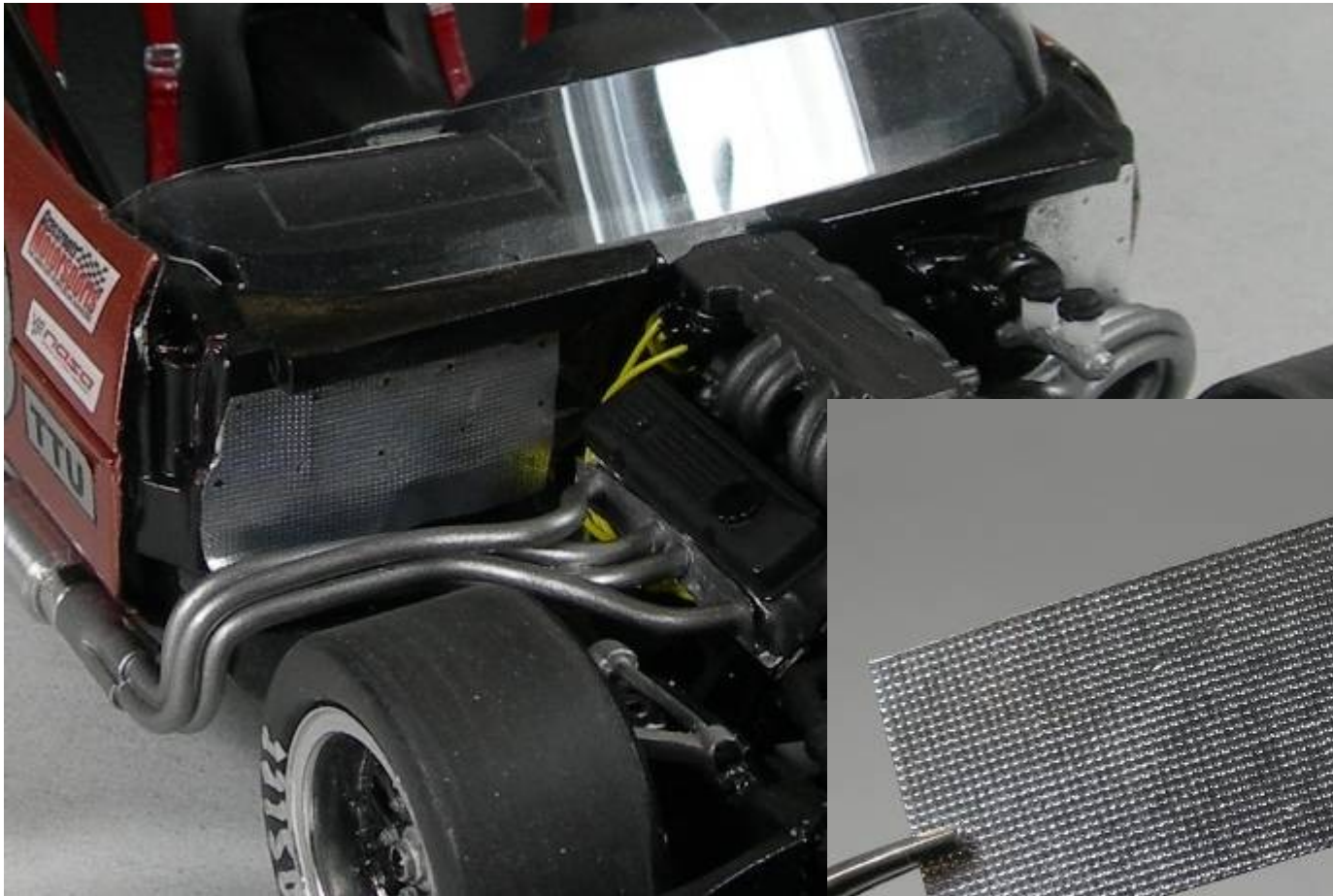
Filter hose washers can be found in the plumbing department of the local home improvement store.



The fine mesh can be used to duplicate the air intakes screens seen on '60's drag cars or stock cars.



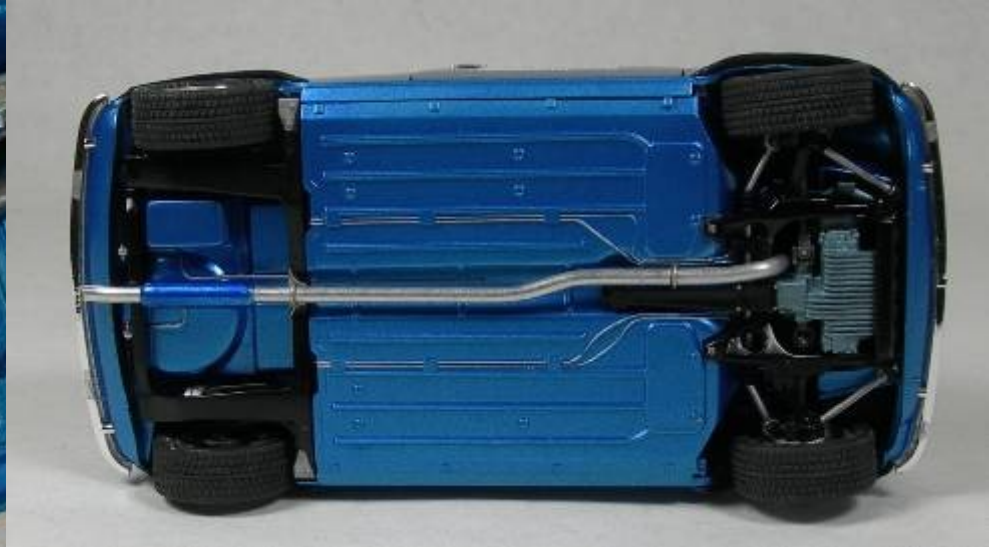
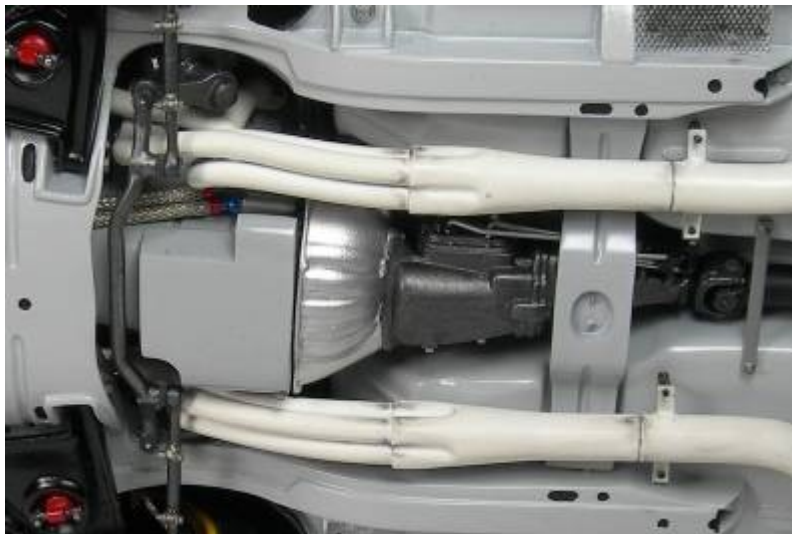
Wrapping foil can be found at cake decorating supply stores or in the cake decorating department of hobby and craft stores.



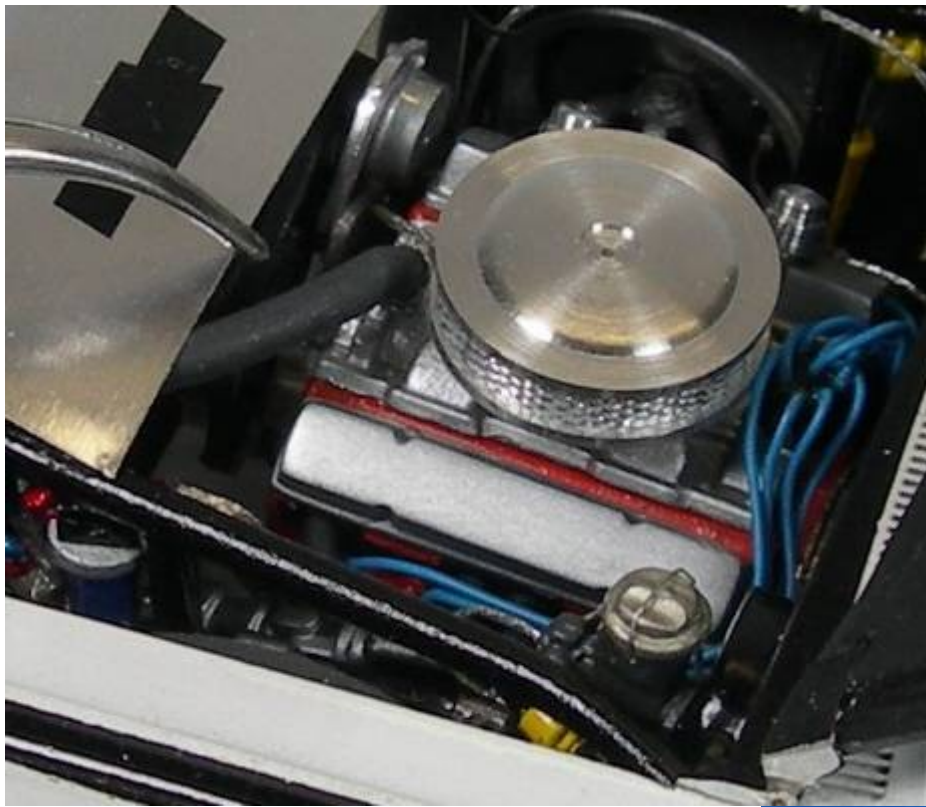
The foil has an embossed pattern that replicates the heat insulation material used on racing vehicles.



Solder comes in many sizes and has numerous uses in building and detailing models, such as...



... headers and exhaust pipes...



... even radiator hoses and plug wires.



Googly Eyes found at the craft store can be used to replicate...



...headlight lenses. Just cut the lens from the backing and attach to a “bulb and reflector” made from aluminum or plastic tubing.



Woven ribbon found at a fabric or craft store comes in many styles and colors and can replicate...



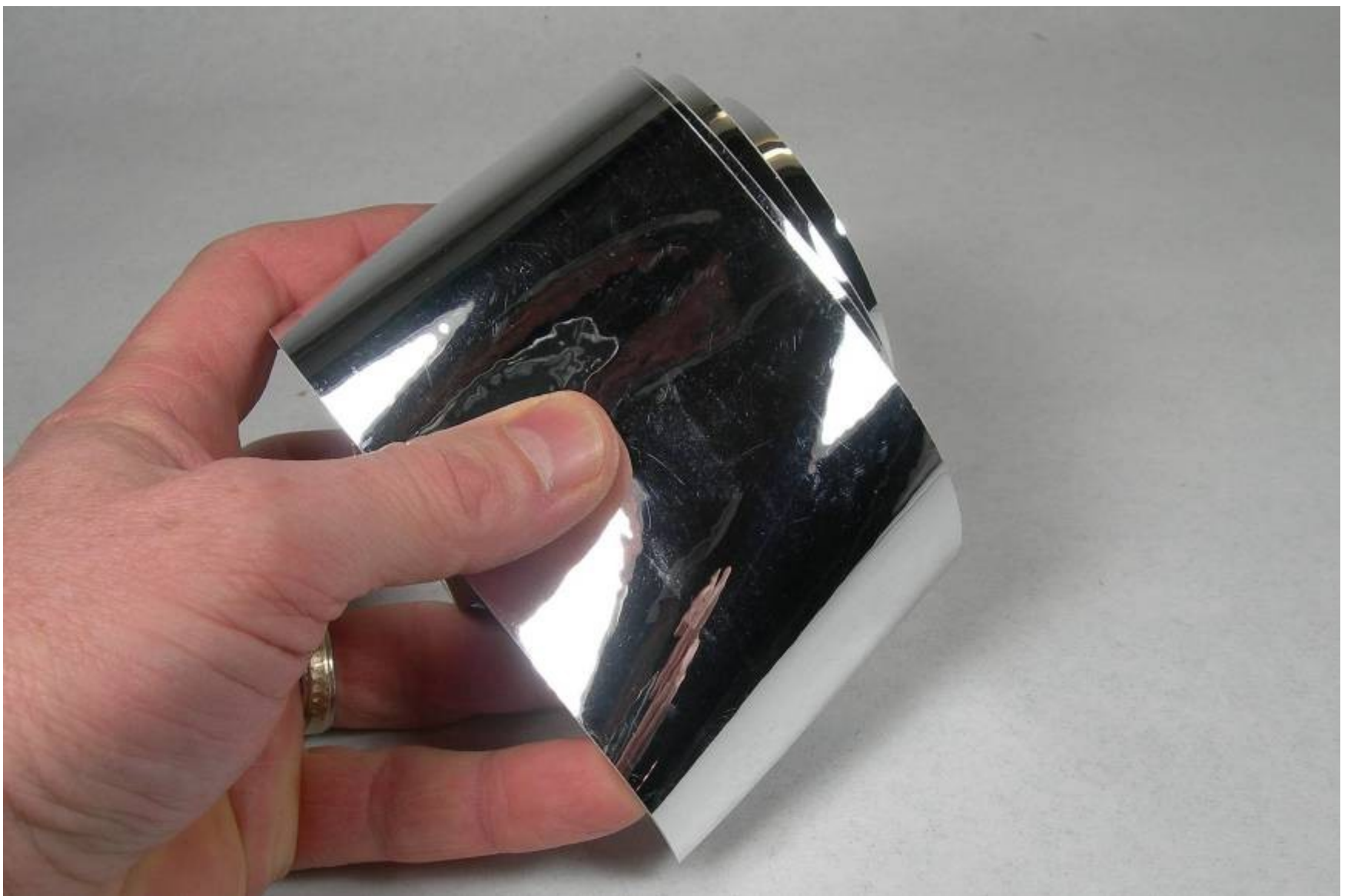
...debris screens on race car grills.



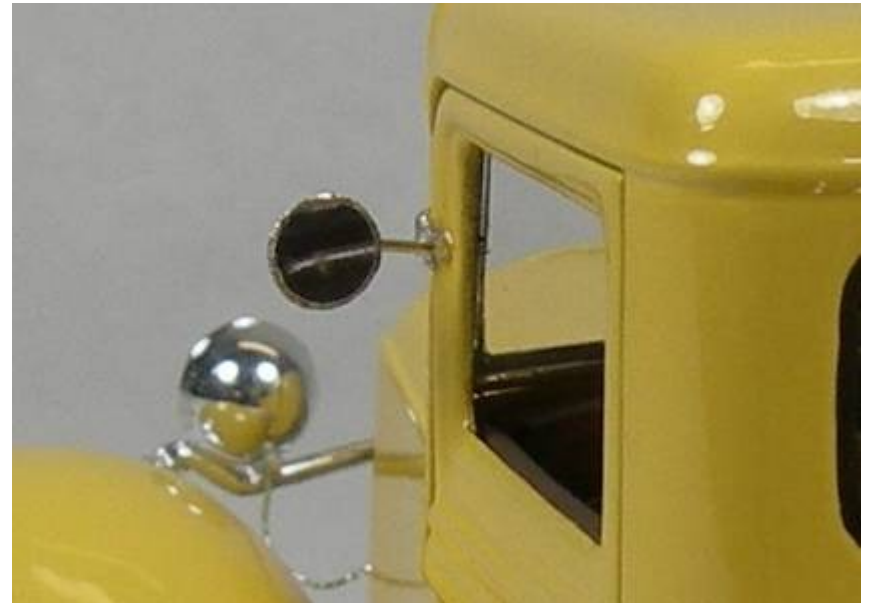
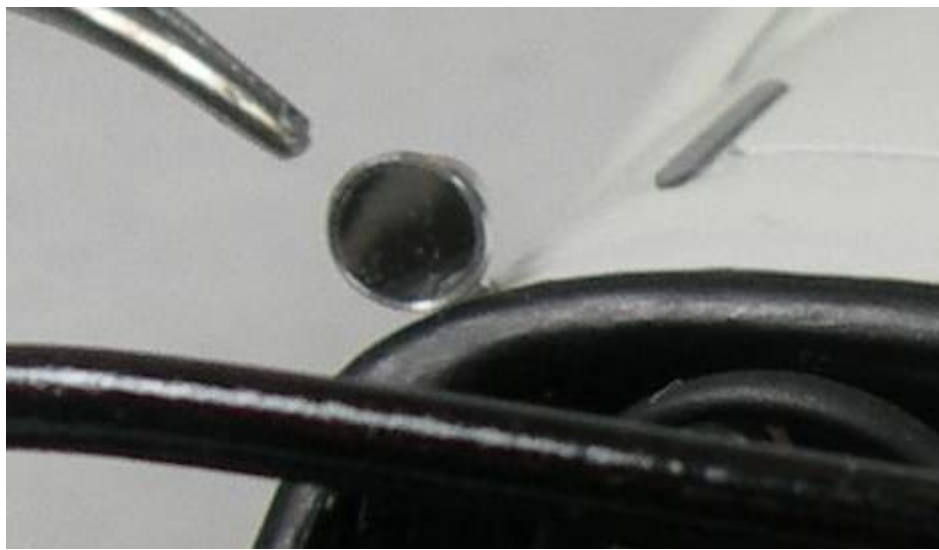
Fishing line comes in many colors and diameters and can duplicate...



...fuel lines and cables in the engine compartment.



Chrome mylar tape can be found at auto parts stores as “Bumper Repair Tape” and can be used for making...



...mirror “glass” for rearview mirrors...



...or even skid rails in pick-up beds.



Standard cloth athletic tape can be painted and used to duplicate...



...heat insulation blanket material.



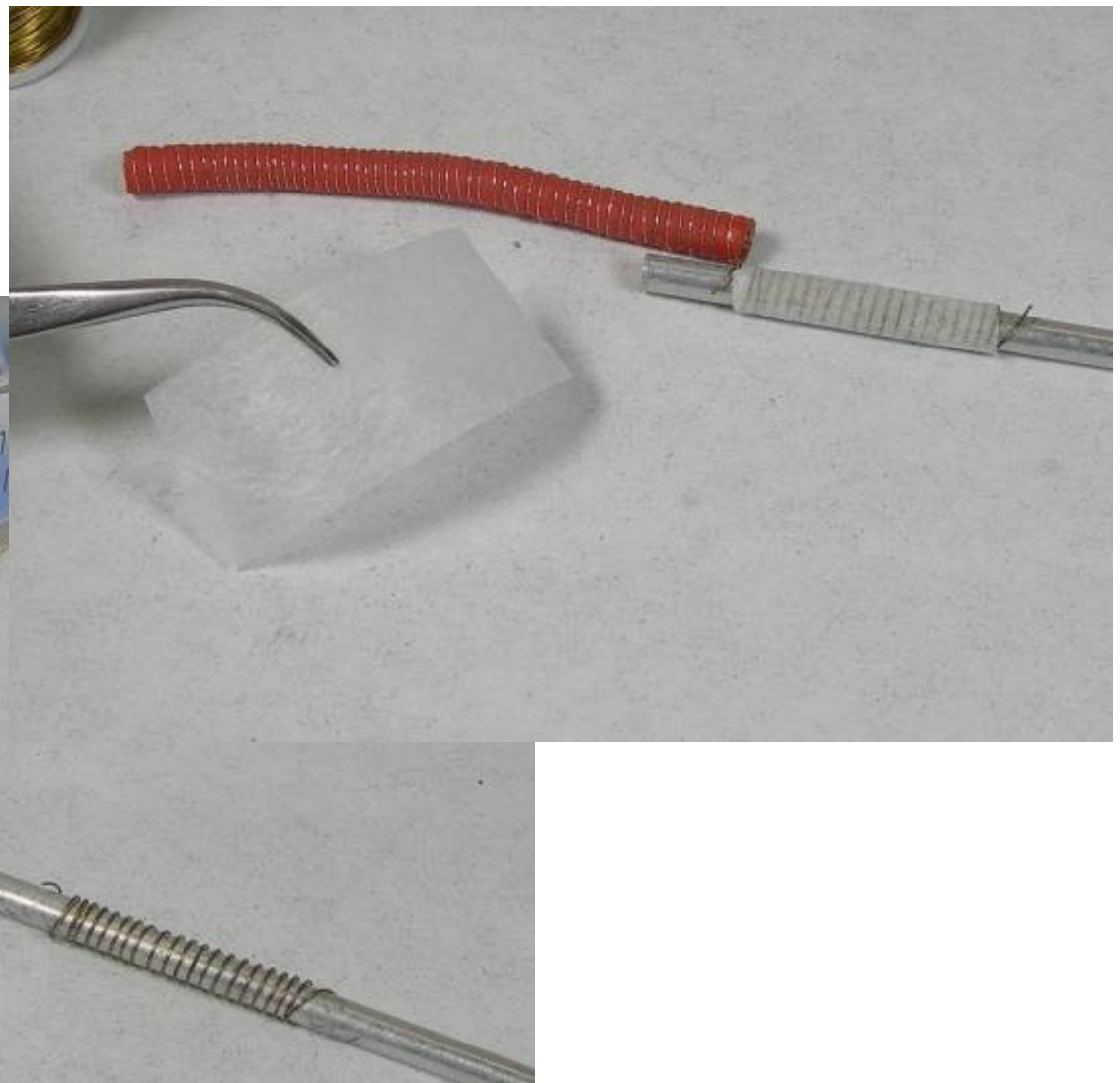
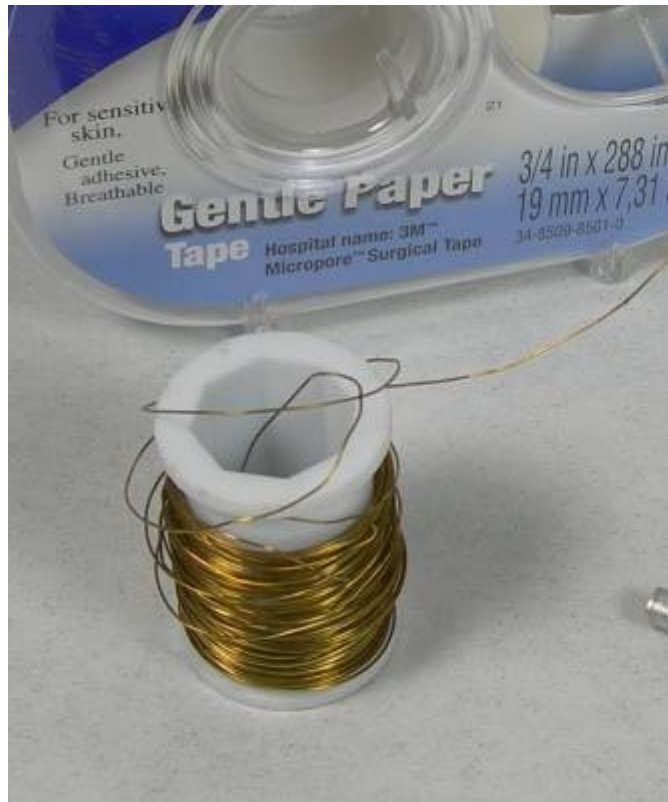
Adhesive-backed nylon found in fabric stores makes excellent...



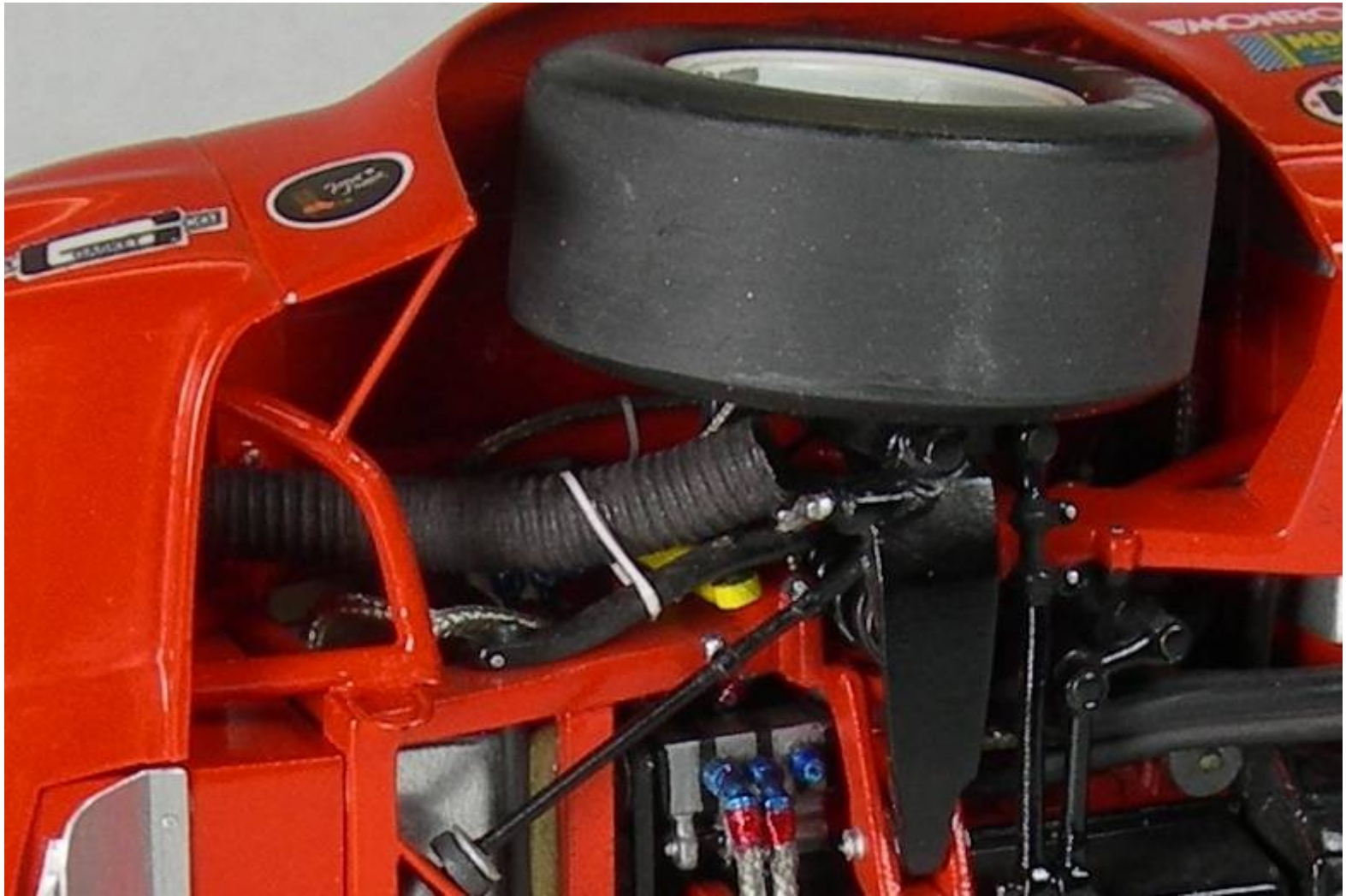
...seat belt material, as it is thin enough to thread through photo-etched buckles and the adhesive allows the material to be doubled over to hold to itself.



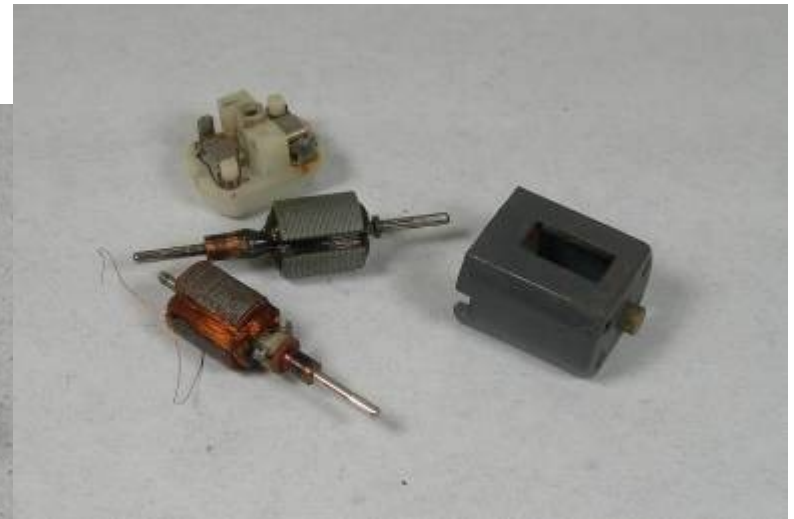
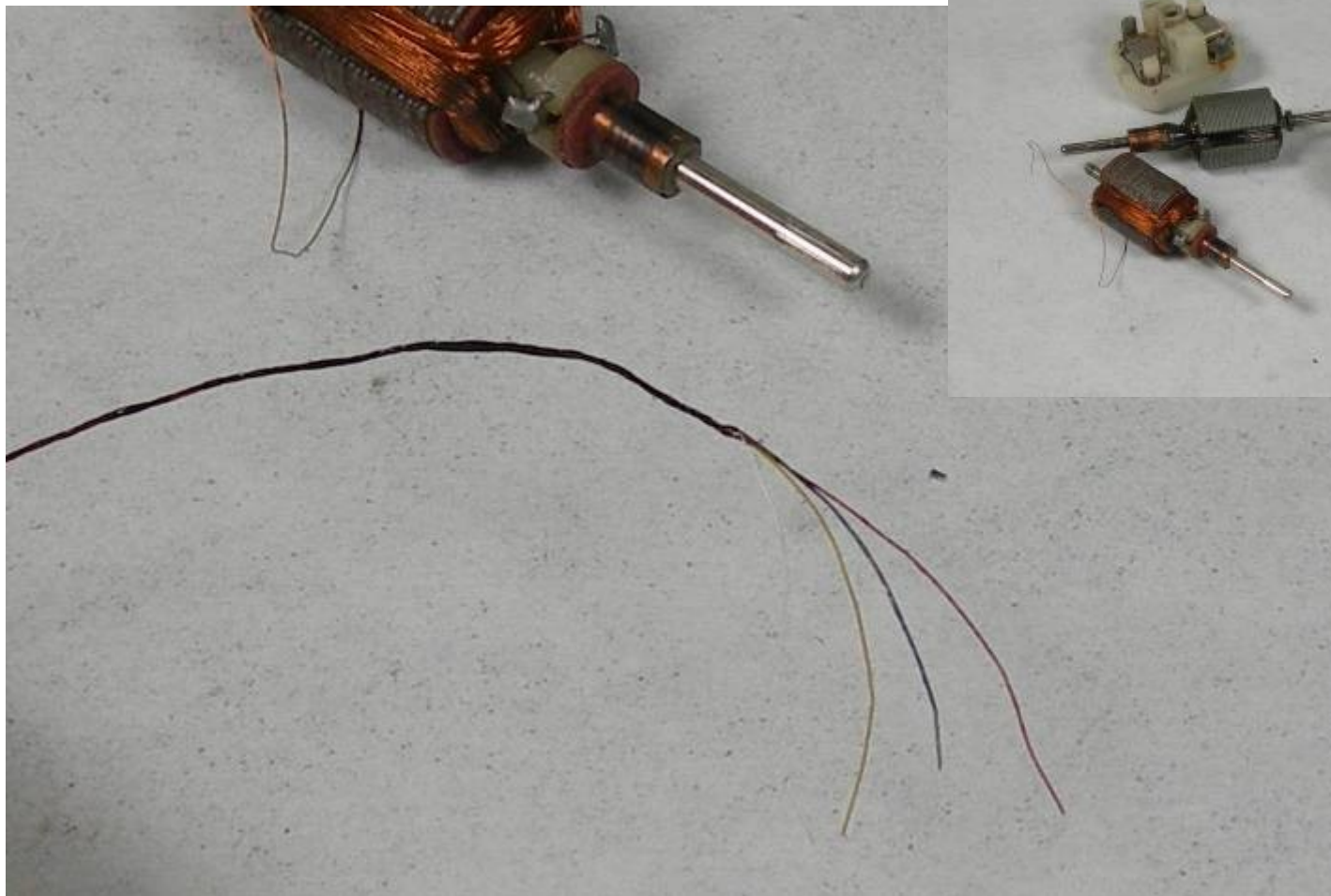
Paper surgical tape can be combined with...



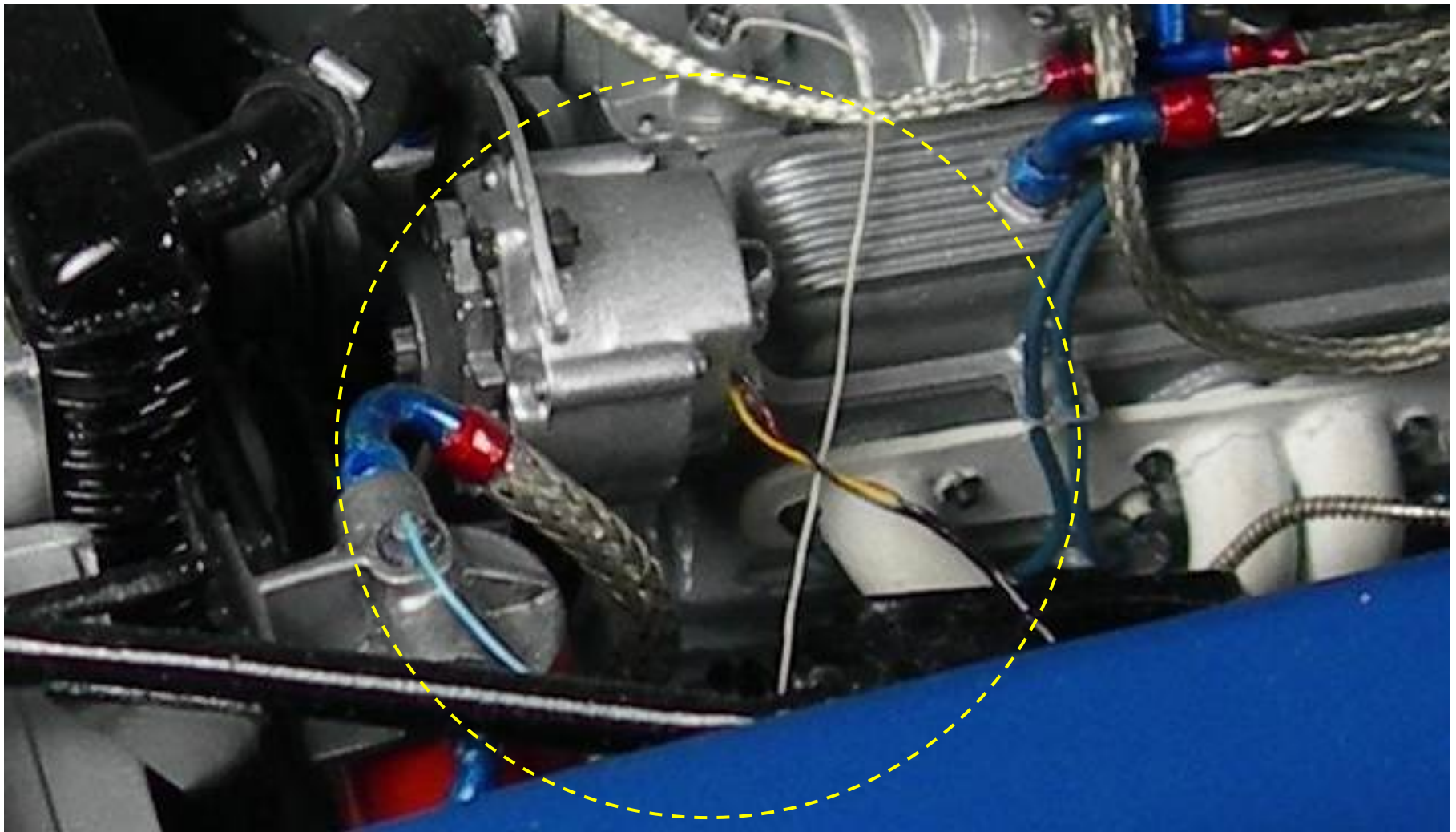
...a coil of fine wire wrapped around an appropriately sized tube. Cover the “spring” with the tape, then paint to suit...



...to make very realistic brake cooling ducts.



Armature wire from old slot car motors can be twisted together and painted to make...



...a convincing engine wiring harness.



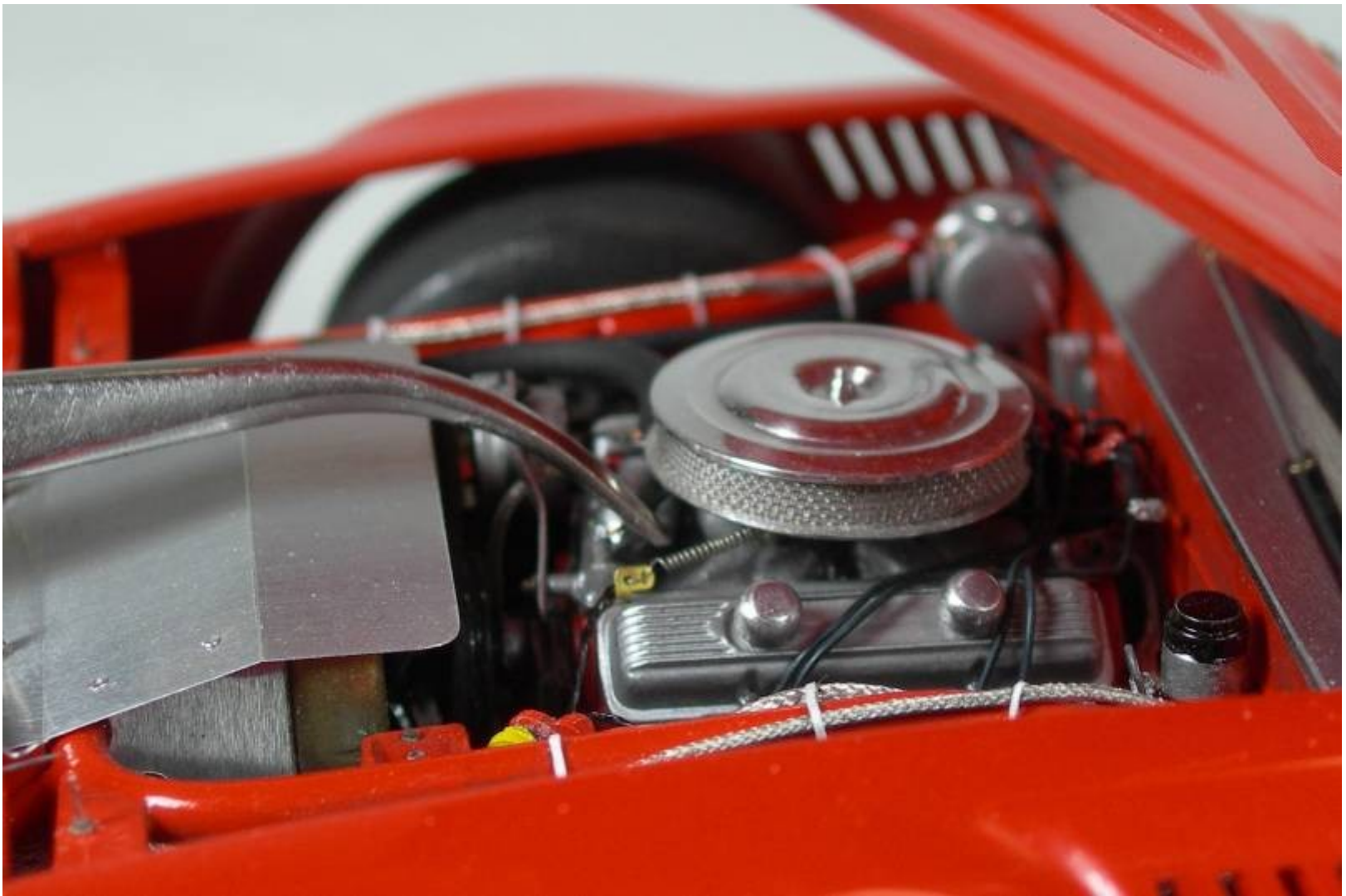
Guitar strings from a music store are an excellent source for very small (0.008" – 0.010" diameter) music wire that can be use to make...



...hood pins or even torsion bar springs to hold up trunk lids
or...



...the pre-wound strings can be “un-wrapped” to provide ready made scale springs to use as...



...throttle return springs or other small coil springs.



A toothbrush is an great source for small diameter nylon bristles that can duplicate a radio antenna. These flexible bristles are a much safer and durable choice than the more commonly used music wire.



Braided nylon line used for fishing line or for beading crafts replicates...



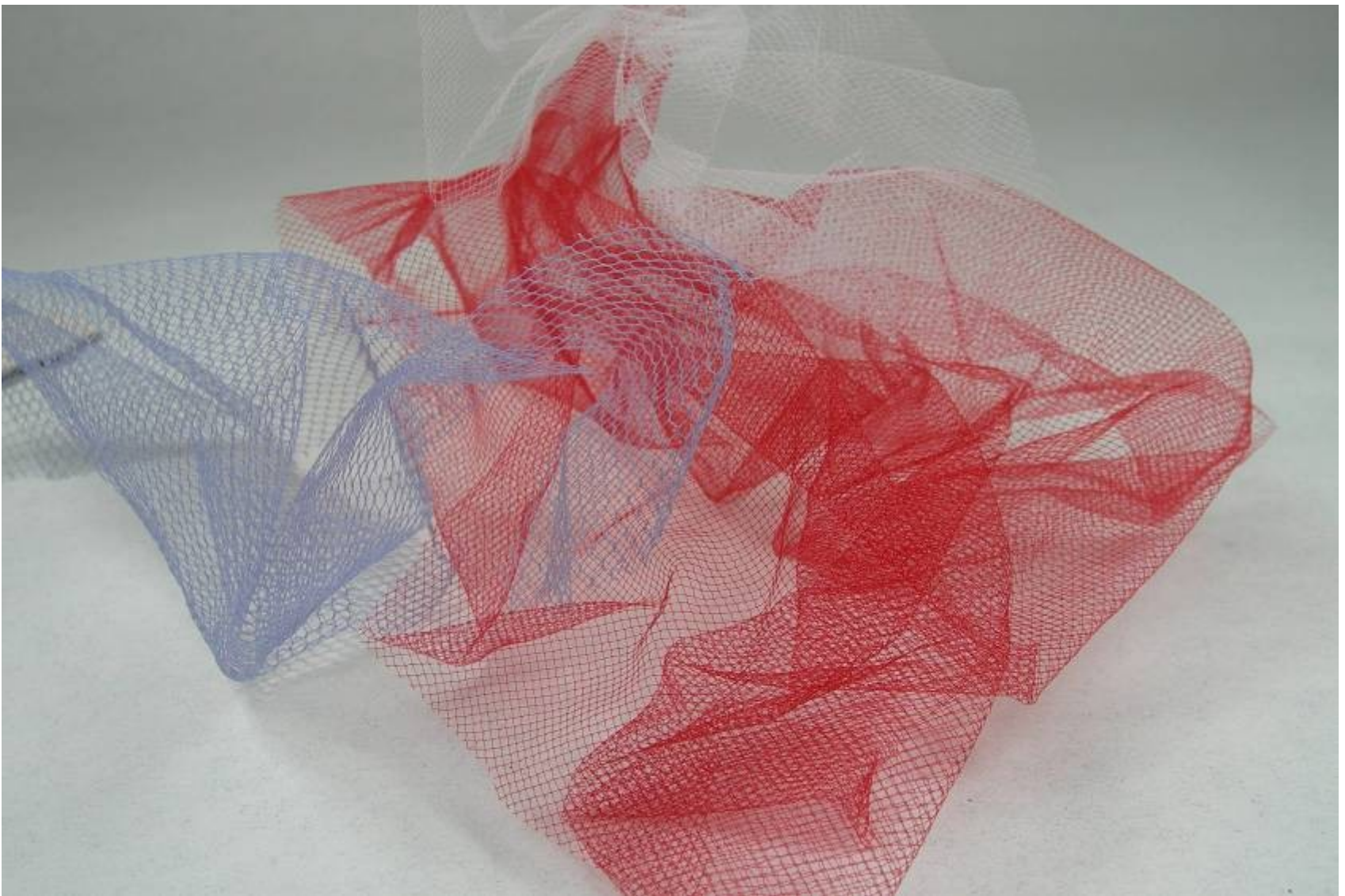
...the black braided brake and oil lines used on vintage race cars.



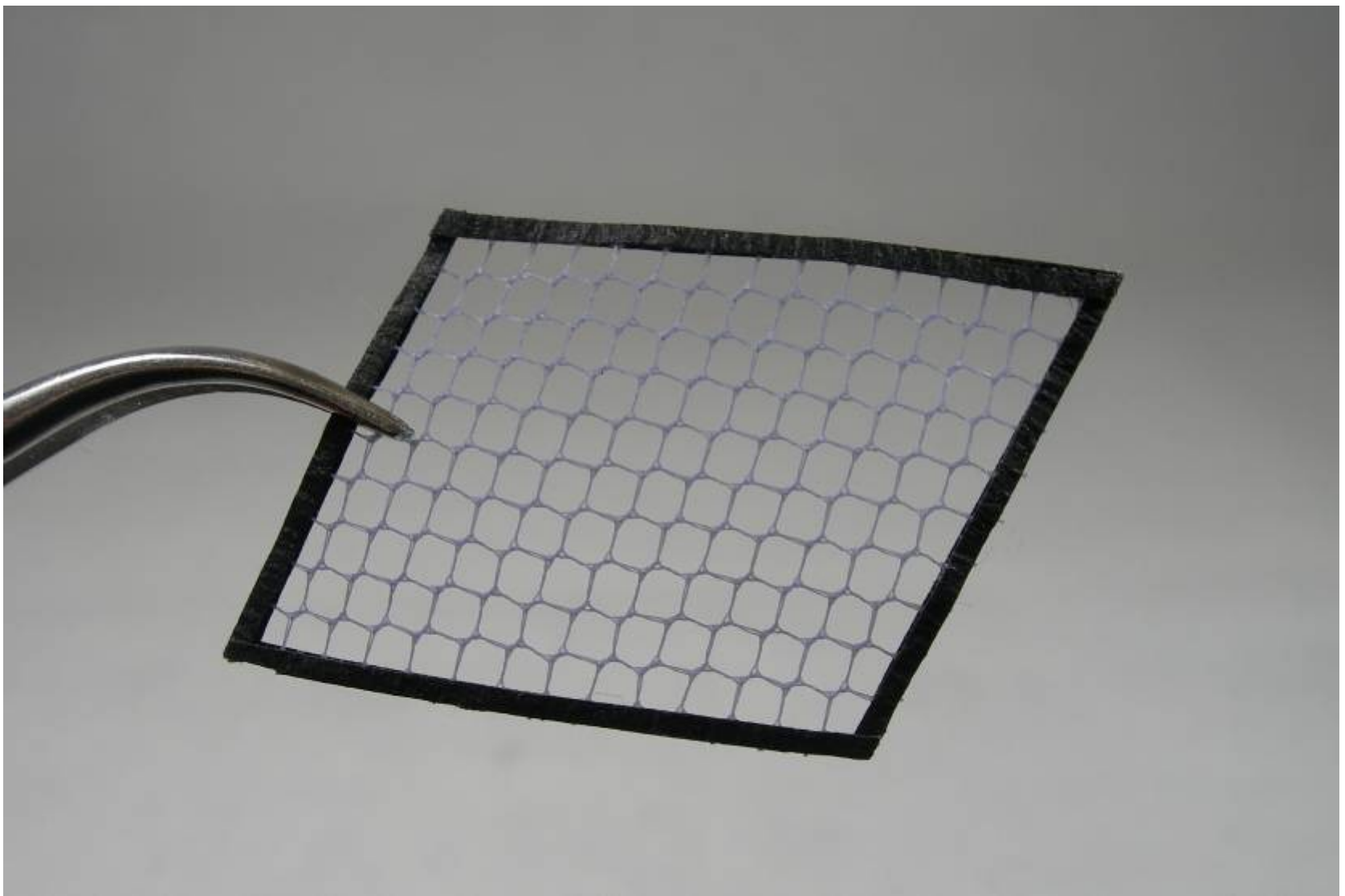
Ping pong balls are made from thin styrene plastic and can be used for...



...making headlight covers or any other spherically-shapes parts. Just sharpen a piece of brass tubing and use it as a punch to make discs.



Common nylon netting found at fabric stores can be...



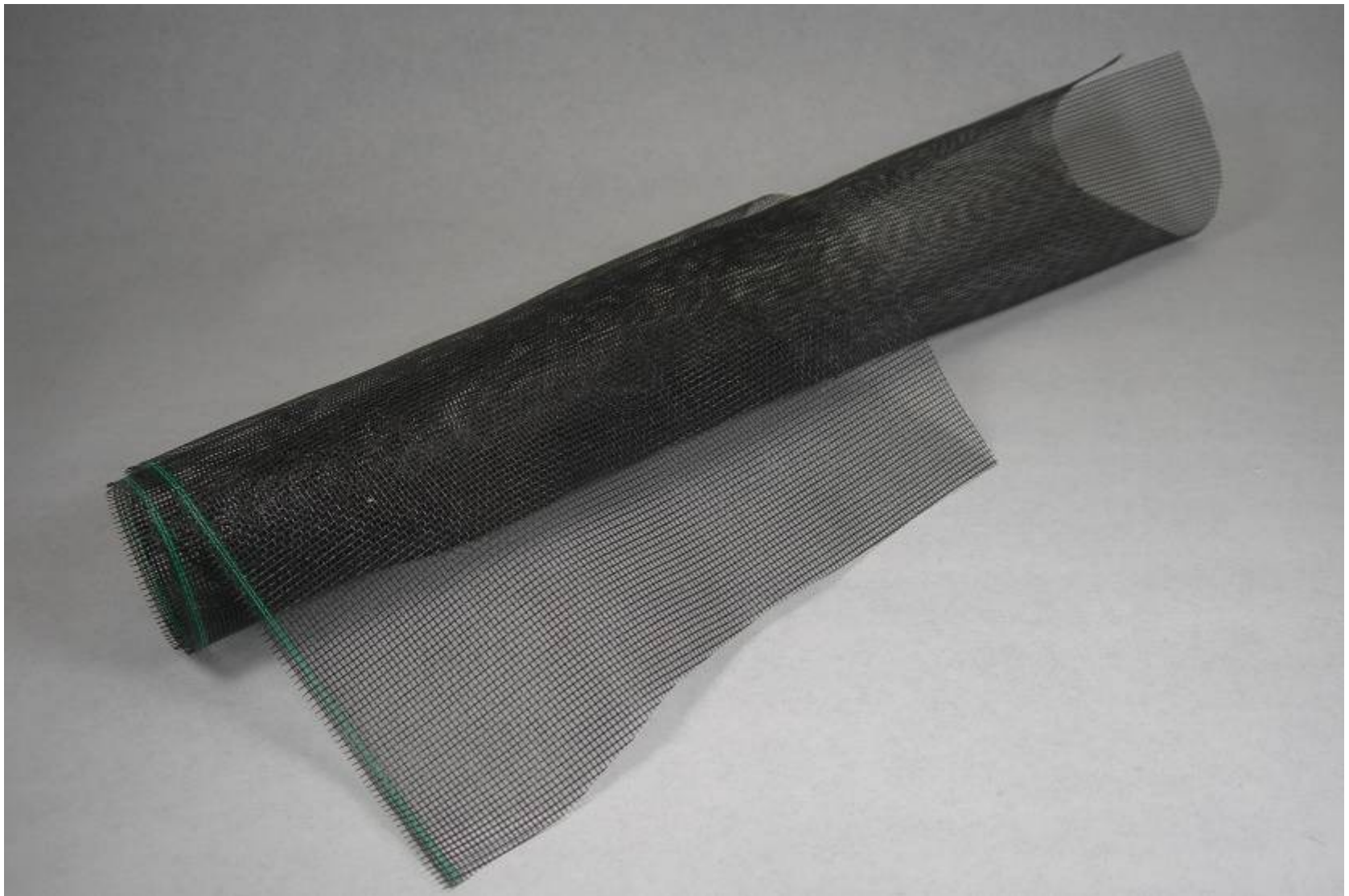
...cut to shape, outlined with tape and painted to replicate...



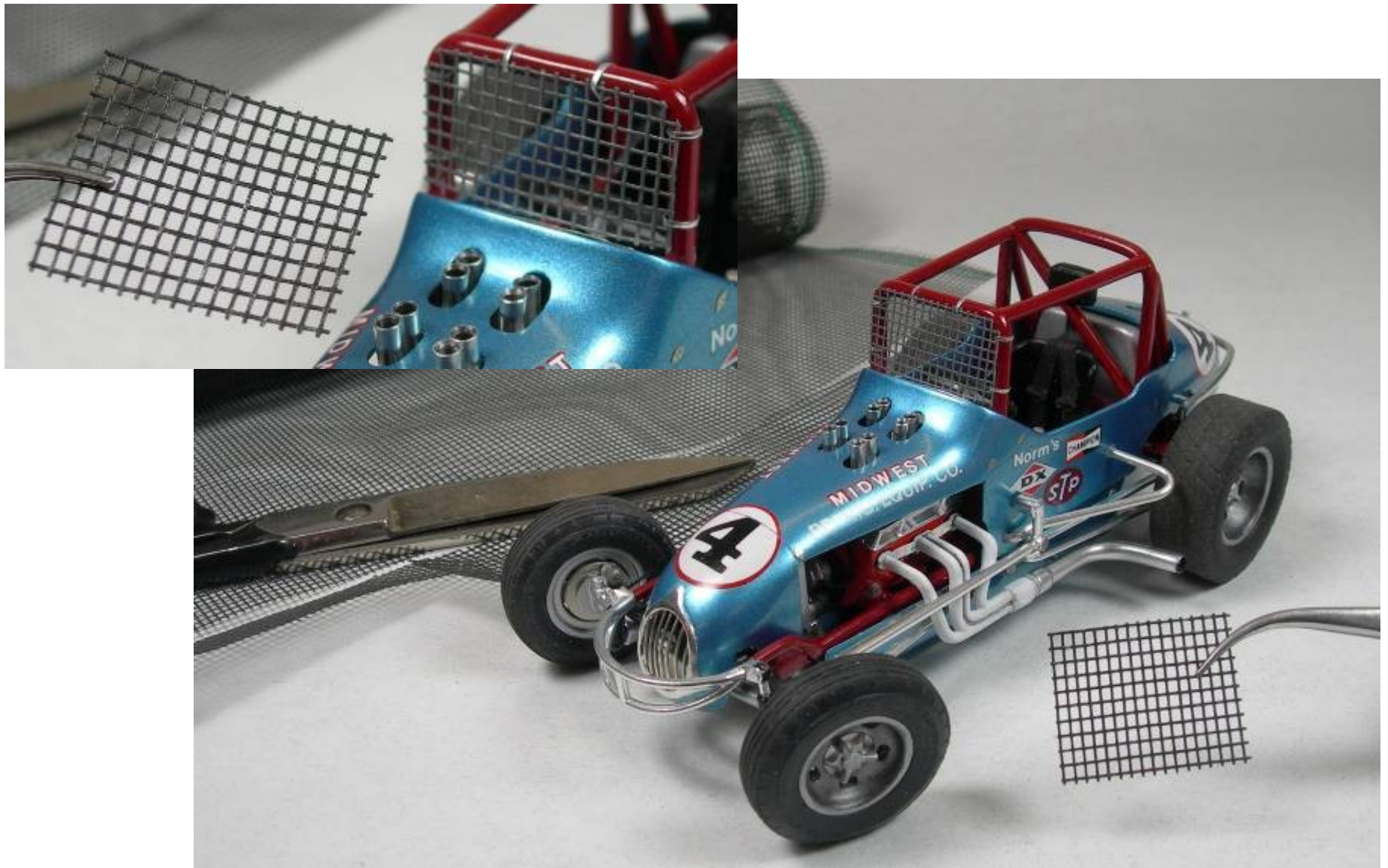
...window safety netting.



It is even available in several mesh sizes so it can be used in most any scale as shown in this 1/24th vs. 1/43rd comparison.



Window screen or “hardware cloth” as it is sometimes referred to is now typically made from plastic instead of metal and can be used to...



...duplicate the window mud screen found on dirt track racers.



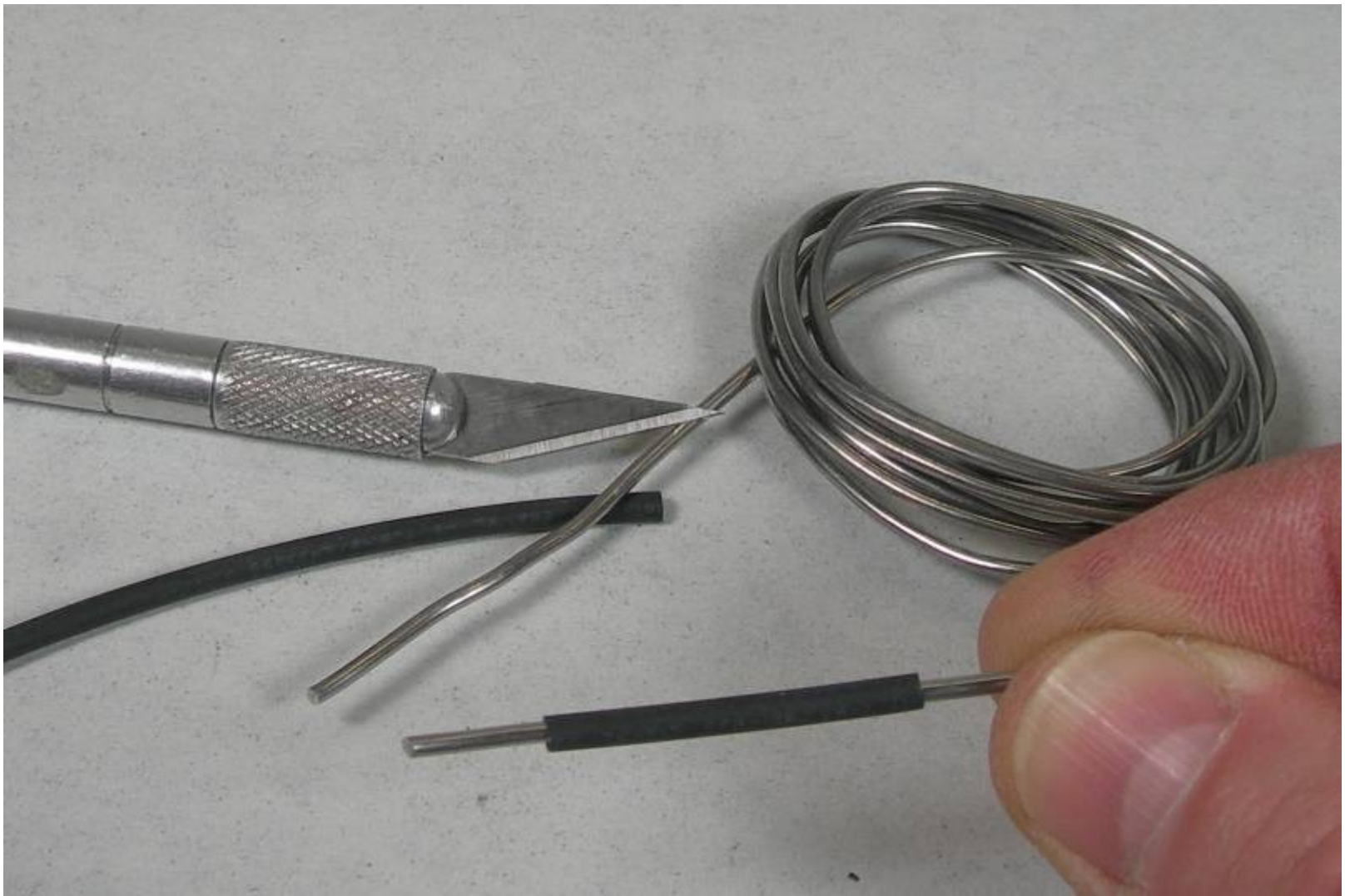
Foam egg cartons or food packaging trays come in various thicknesses and densities and can be easily cut and painted to duplicate...



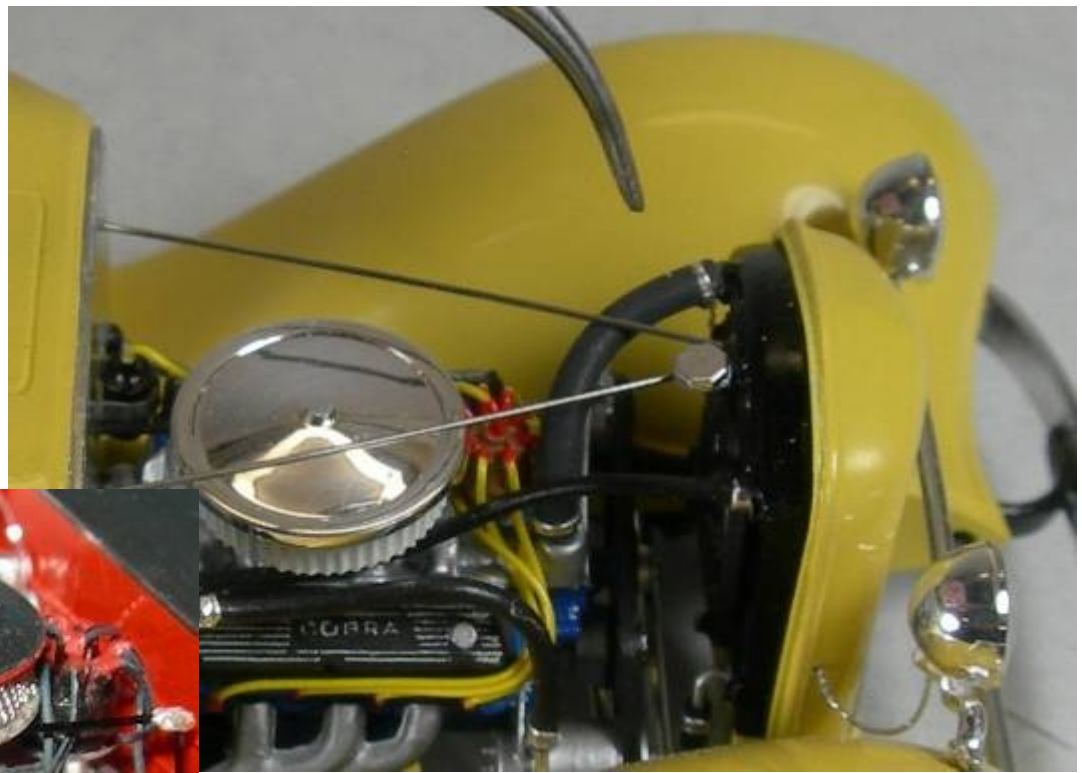
...air cleaner foam or under-hood sealing gaskets.



Electrical tape makes convincing air dam skirts when cut to size and detailed with some rivets. It is also available in a variety of colors to suit your particular needs.



Heat shrink tubing can be slipped over solder and *carefully heat shrunk* to replicate...



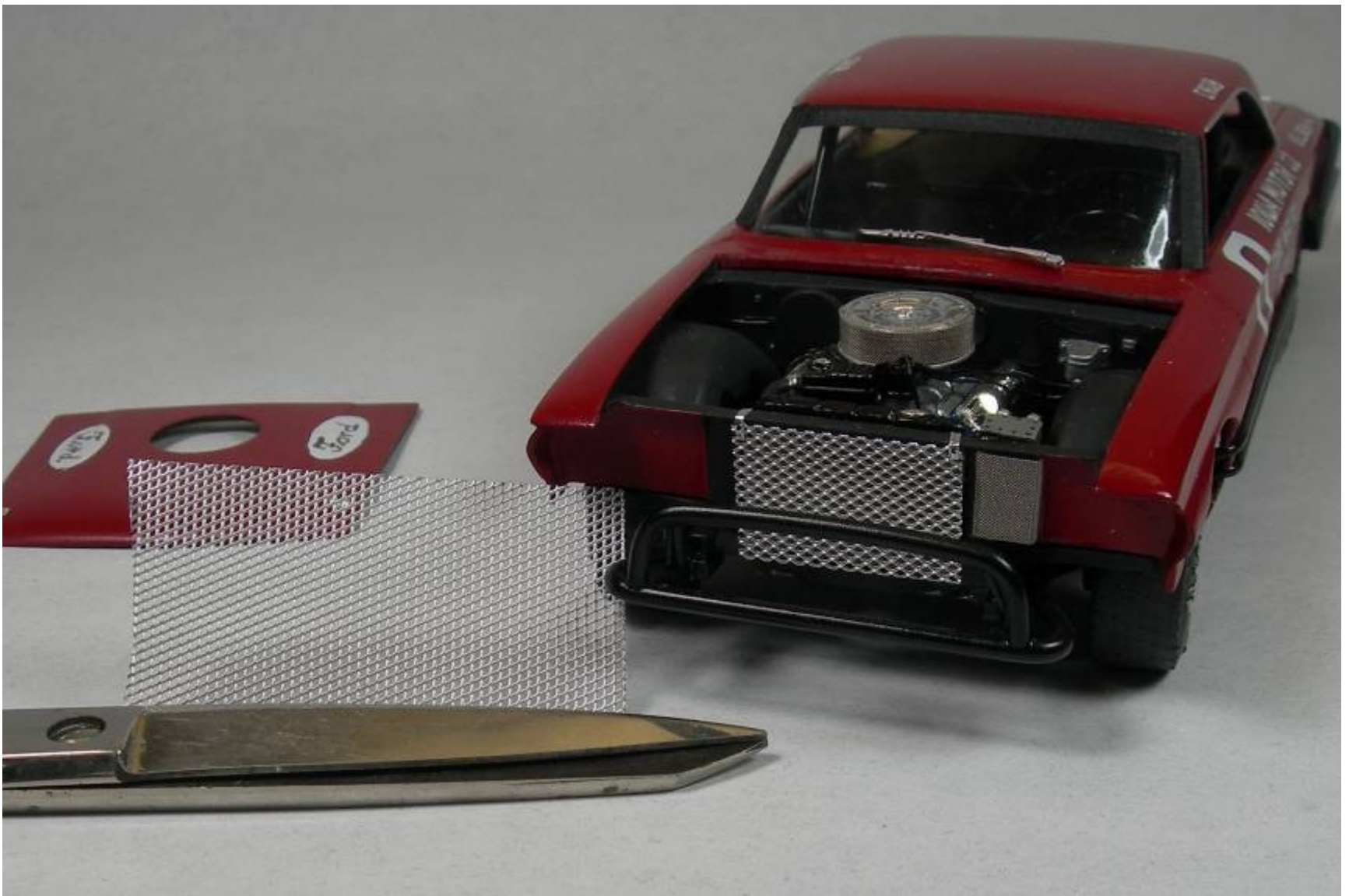
...radiator hoses or...



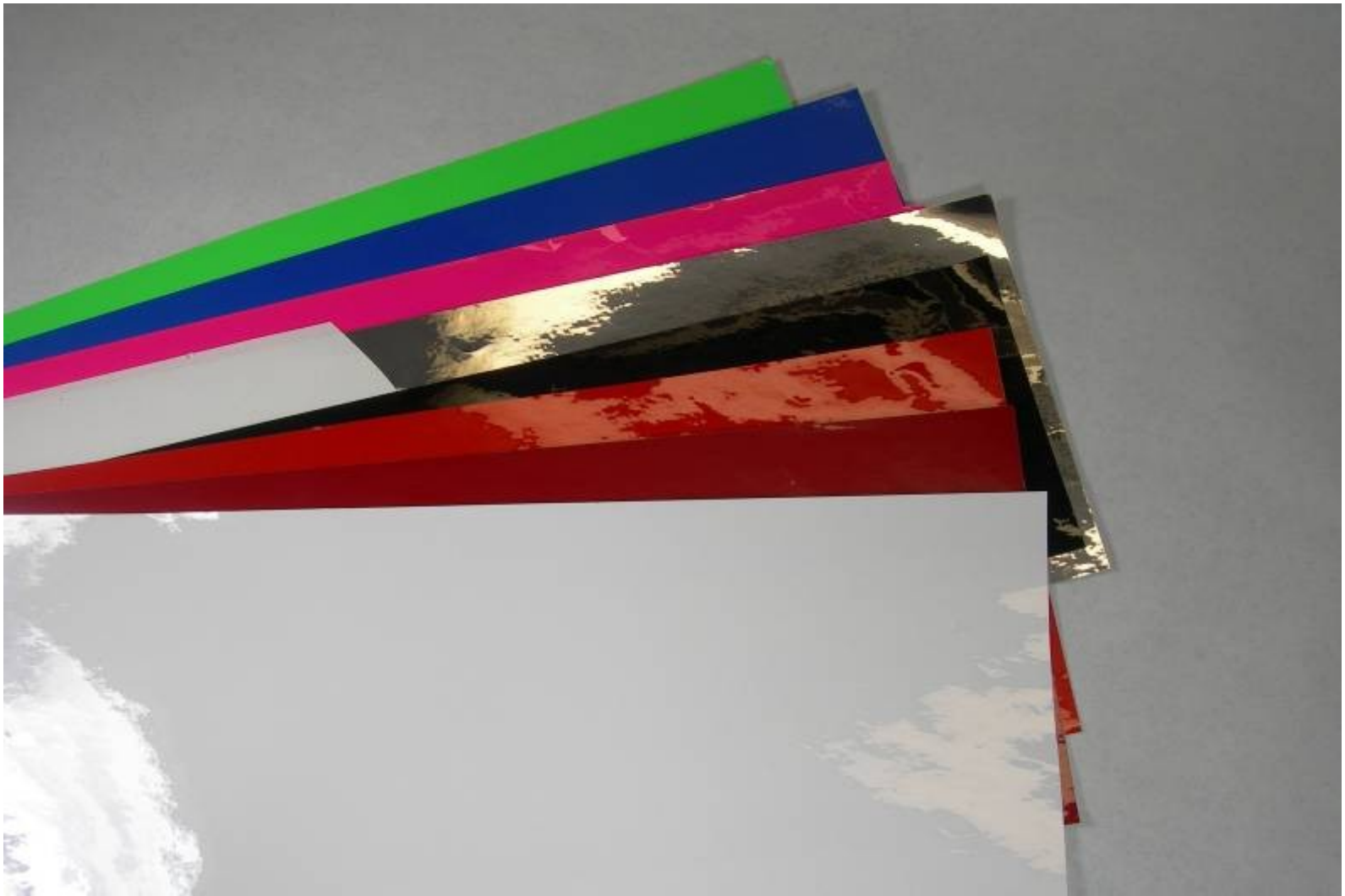
...it can be slit and applied to roll cages as padding.



A frying pan splatter shield can be cut and used as...



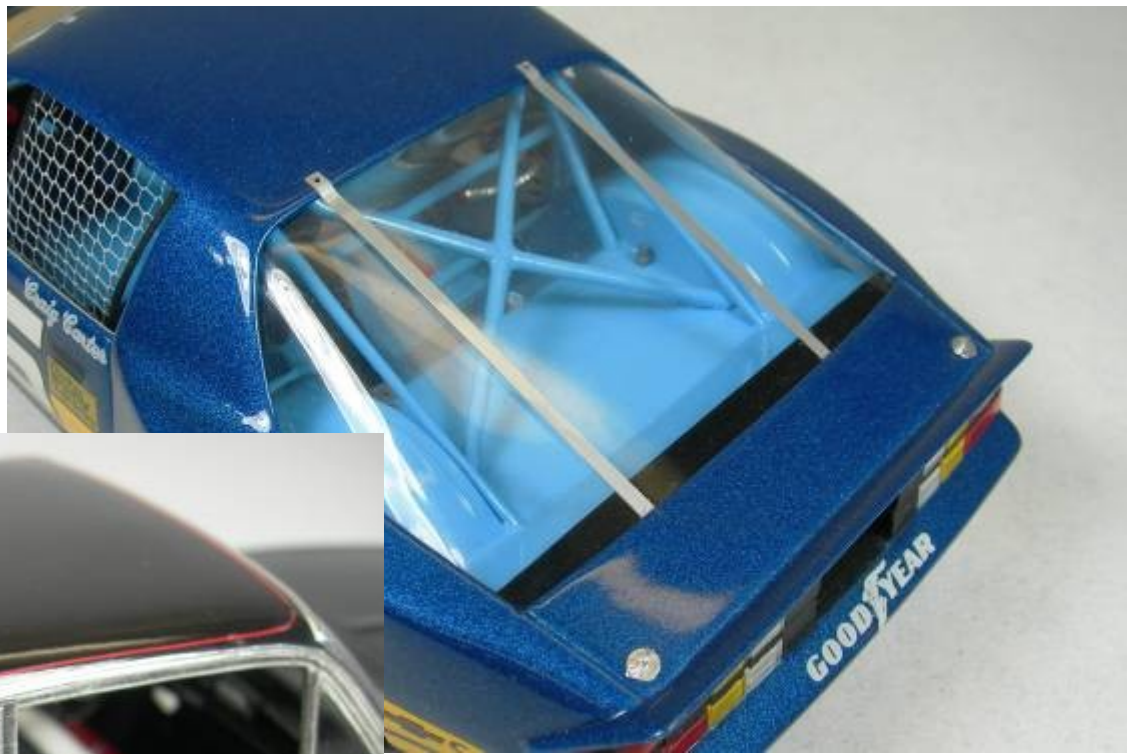
...mud screen for old dirt trackers.



MonoKote trim is a very thin, adhesive-backed mylar that can be found at R/C airplane shops. It comes in a variety of colors and has many uses.



Such as graphics or chrome trim strips...



...or even pin stripes or window straps.



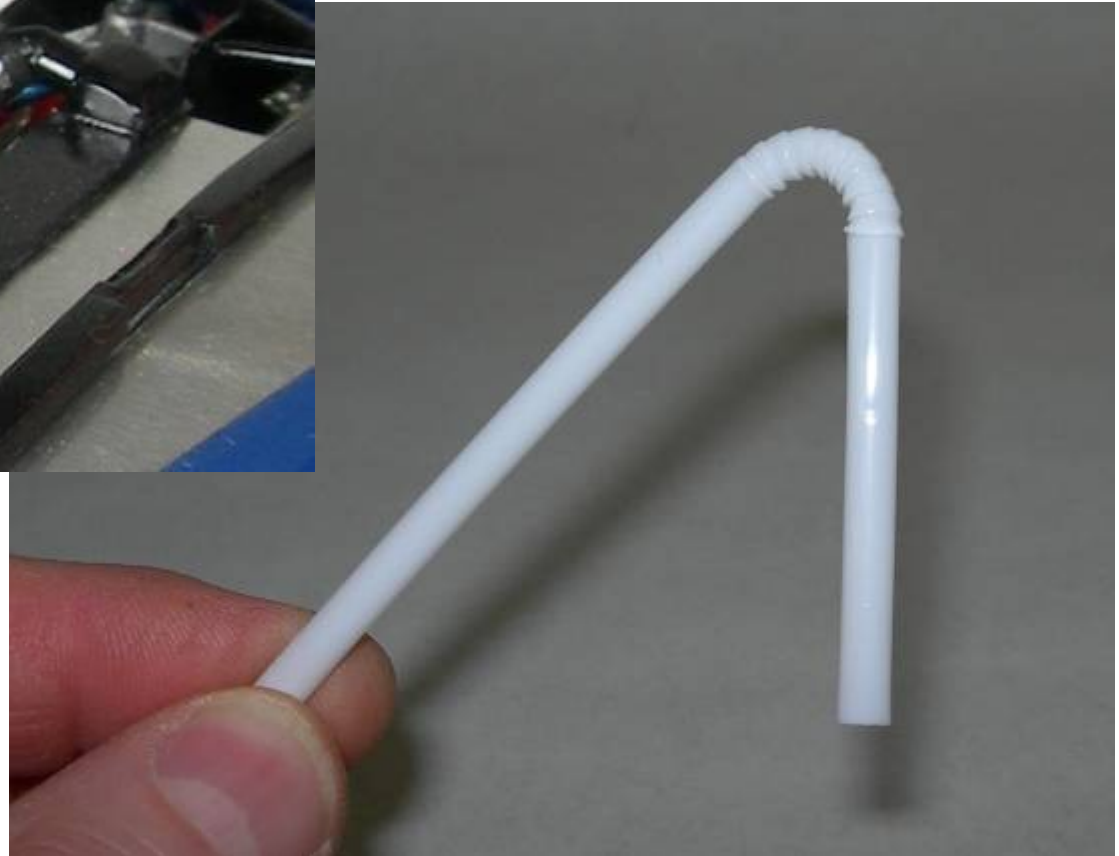
Small electrical components such as resistors and diodes found at Radio Shack can be painted and detailed to replicate fuel filters.



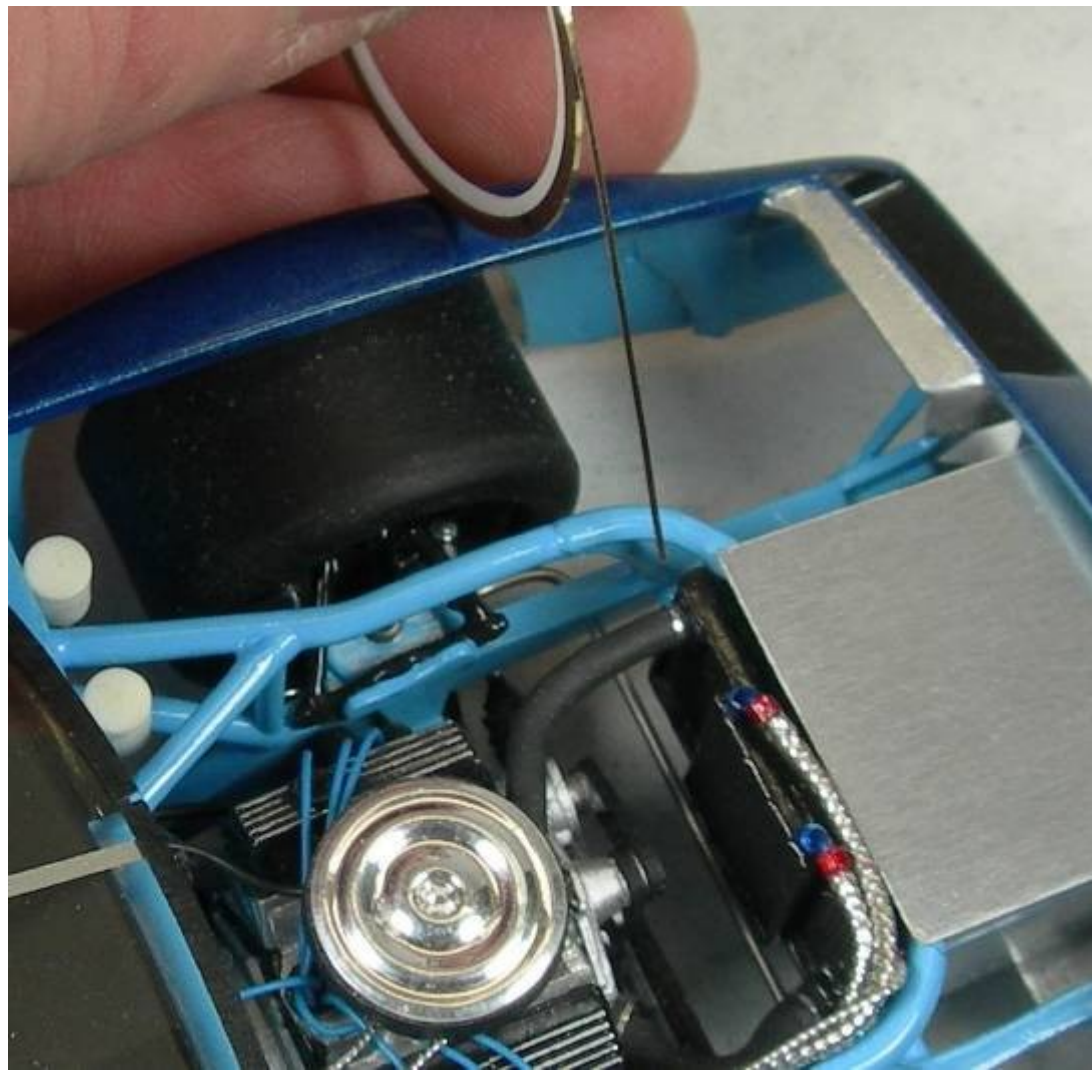
Vinyl paint, shoe dye or “suede” paint is available in a variety of colors and sheens and...



...can really help to add realism to interior trim panels



Juice box drinking straws can be cut and painted to replicate corrugated radiator hoses on larger scale cars.



1/64" Chrome nail striping tape from a beauty supply store makes duplicating scale hose clamps a simple task.



And since you are already in the store, pick up some of the various foam nail boards for sanding sticks, as well as some squirt bottles and pipettes for your paint booth.



Aluminum pans can be found in the cooking aisle of your grocery store or as leftover packaging from baked goods. These come in various thicknesses, tempers and finishes and...



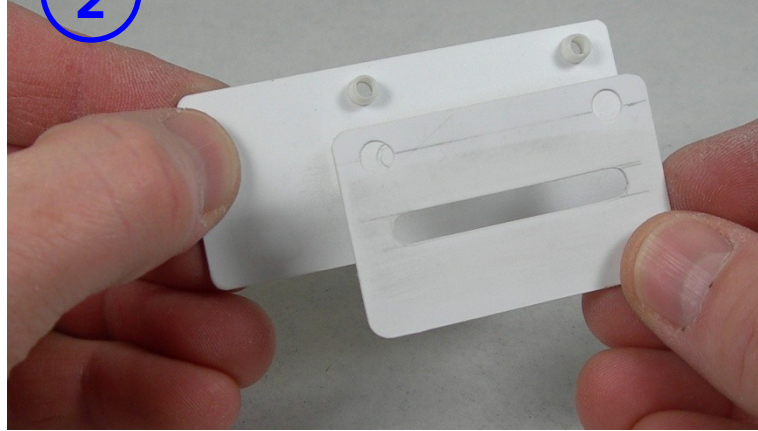
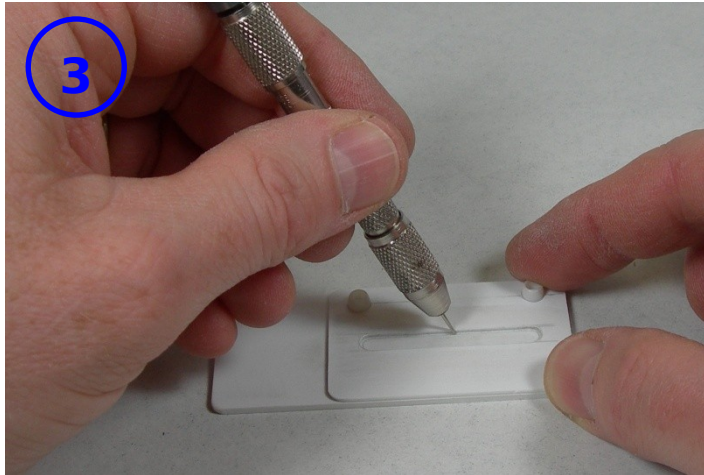
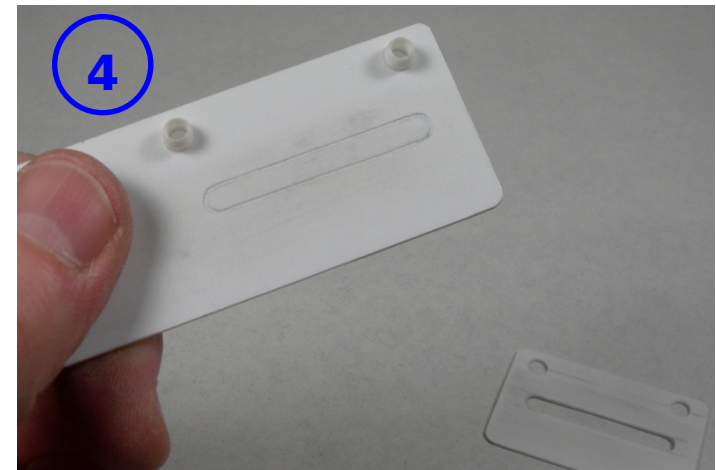
...can be cut and bent into any shape and be used for interior panels, blank-off panels...



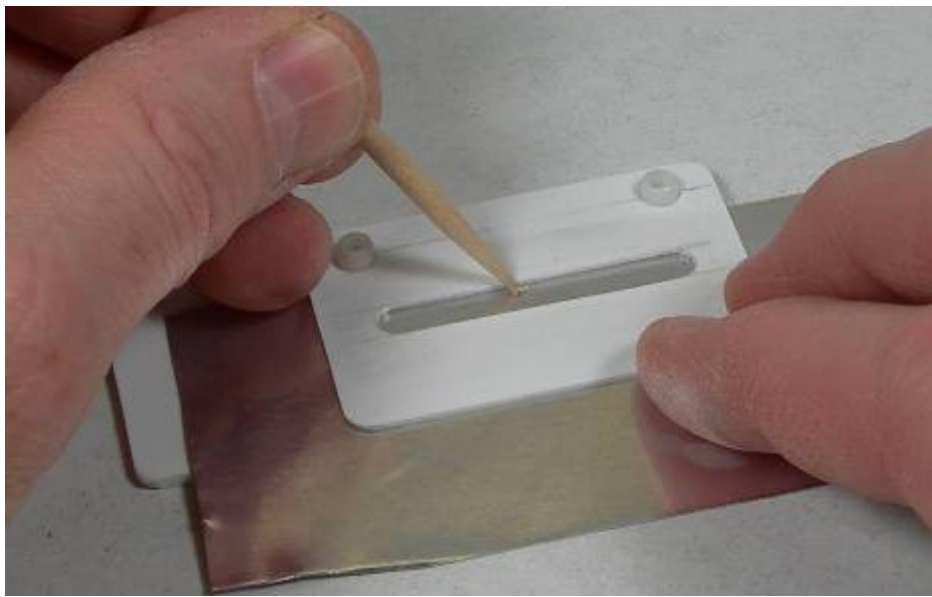
...trim panels...



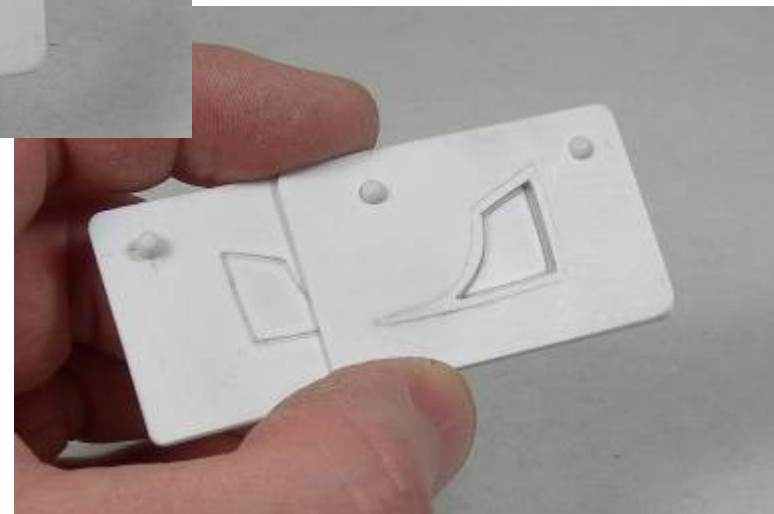
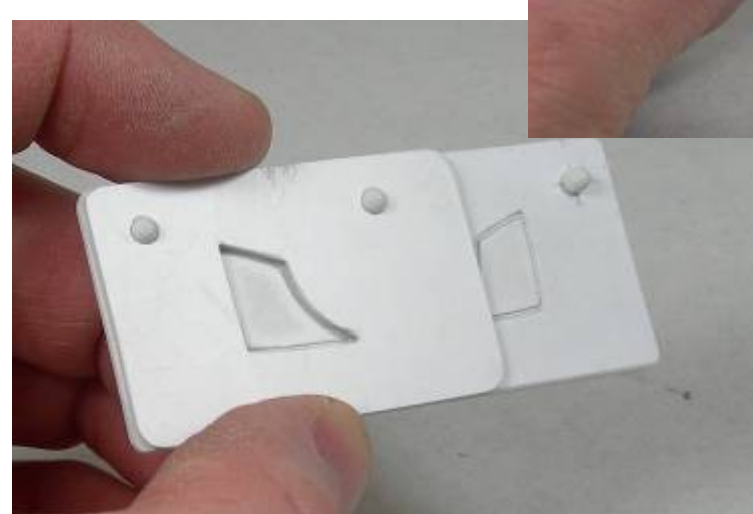
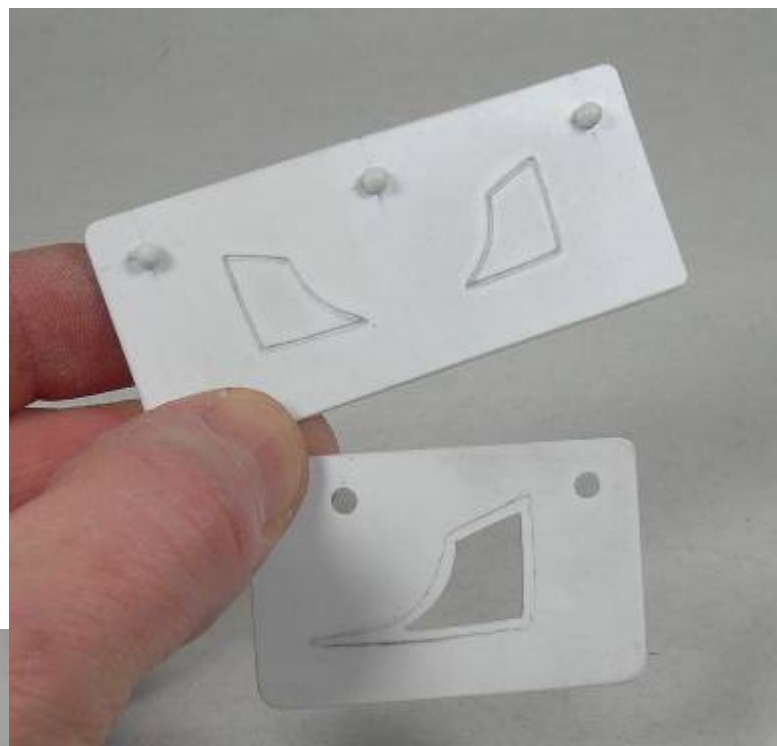
...or any number of various parts and details.

1**2****3****4**

Here's a neat way to duplicate bead-rolling on those interior aluminum panels: First cut out the pattern in a piece of 0.030" sheet plastic and add two locator holes. Make a matching base with two posts to align with the holes on the template. Use a needle-point needle to scribe the pattern into the base plate, creating a groove about 0.020" deep.



Slide a piece of aluminum pan material in between the pattern and the base and emboss it following the template using a pointed wooden dowel to create the raised bead. Cut the piece to shape and install.

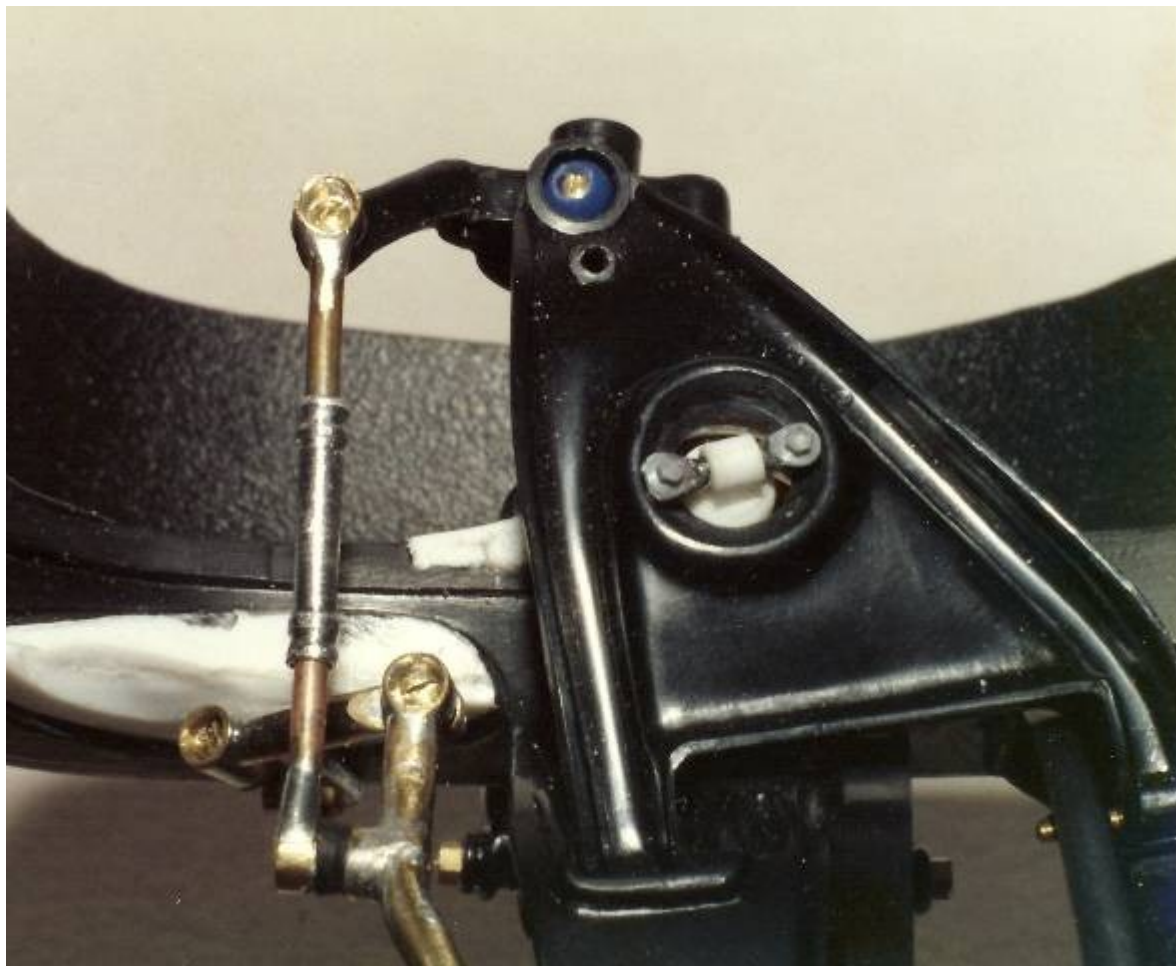


Making matching left-hand/right-hand panels is also easy; just make two sets of pegs on the base and flip the template to produce the mirror-image panels.



And finally, an oldie, but a goodie.

I include it as a tribute to Don Emmons. His "Detail for Real" column in Model Car Science Magazine formed the basis for my modeling building. Map pins come in many sizes and colors and can be used to replicate many round objects on cars such as shift knobs, as well as...

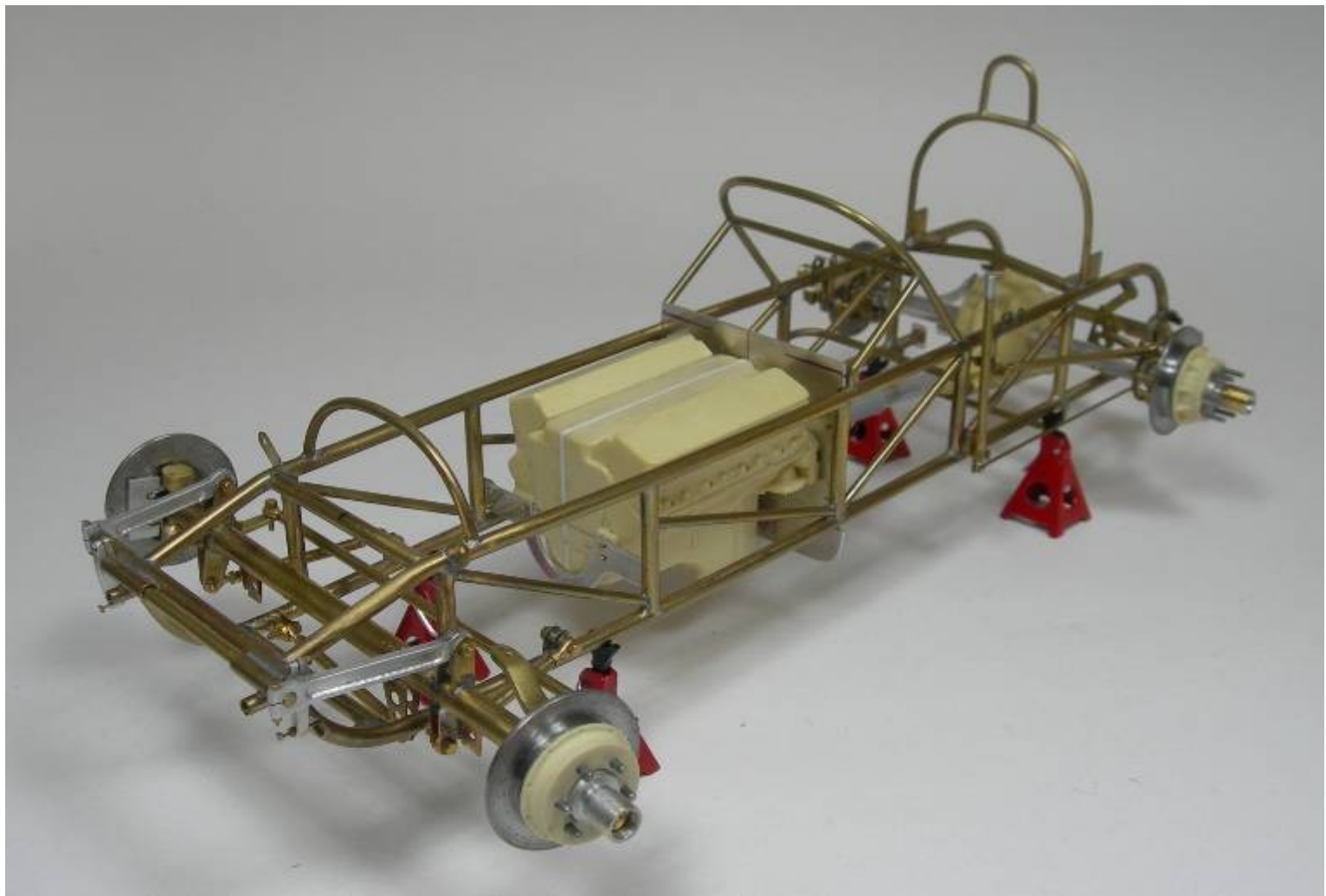


...working scale ball joints. Remove the plastic head of a map pin and drill out the center hole to accept a jeweler's screw. Next, drill a blind hole in the control arm slightly larger than the pin head. Insert the "ball joint" through the control arm and thread it into the knuckle.

So, how do you define
scratch building?



Like this?



Or perhaps like this?

Well anyway you
define it is okay, as
long as you are
improving your
skills and having
fun.

After all, this is
supposed to be a
hobby. Right??